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Designed for both parents and teachers, the handbook presents methods for educating the moderately and severely retarded child. Those methods include measuring progress, rewarding and punishing, ways of using rewards and punishers, ways of giving positive reinforcers and punishers, withholding reinforcers (extinction), letting the child reward himself, spacing giving reinforcers, shaping behavior in small steps, using signals, and building control. Twenty-three activities are next presented, each with a task definition, pretest, and suggested education program. These activities include sitting quietly; building puzzles; coloring; playing with toys, balls, and wagons; toilet training; eating correctly; putting on a pullover shirt, pants, and socks; buttoning buttons; tying shoe laces; brushing teeth; washing; imitating movements, mouth movements, sounds, and words; understanding words and the names of colors; naming objects, actions, and colors; and talking in sentences. Appendixes include materials needed for the activities, suggested reinforcers, sample forms for pre- and posttest, glossary, and applications to blind and deaf children. (LE)

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Lawrence A. Larsen, M. A.

William A. Bricker, Ph. D.

IMRID PAPERS AND REPORTS

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This manual is available from IMRID,
Box 163, George Peabody College,
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# PREFACE

This instructional booklet was written primarily for the education of those who will be working with the lower-functioning retarded child, whether parent or teacher. It is not designed to be all-inclusive -- rather the authors recognize the inherent limitations of the manual and hope that these can be rectified by a perceptive, enthusiastic, and knowledgable teacher. It is intended to serve as a guide for the parent or teacher, and as an easily readable and hopefully useful outline of some of the techniques and procedures that can be used with retarded children. It is written with the authors' recognition that severely and moderately retarded children can be educated, and that we have not in the past provided the kind of environments necessary for them to achieve at a level in keeping with their potential.

The manual is roughly divided into two parts, the first of which is oriented towards the methods and principles of behavior modification, with the second aimed at specifying in detail some of the activities to which these methods can be applied. We have tried to order the chapters in each of these two parts so that there is continuity, and each builds upon preceding chapters. For this reason we suggest that each chapter be mastered before preceding to subsequent chapters.

Most of the introductory sections consist of a general rule for dealing with the mentally retarded, with at least one and usually two examples of that rule in practice. It is up to the teacher to make these rules come "alive," and to provide more examples, where necessary, until the student or parent is able to apply them generally across children and across behaviors.

The reader will probably feel that the procedures described in this booklet are overly mechanical and rigid. It might be argued, in the extreme, that they are superficial and, indeed, de-humanizing. Unfortunately these critics are, in this case, more right than wrong. The writers recognize the fact that the educational process is more an art than a technology, and that such things as insight, intuition, and even love, are necessary ingredients for effective behavioral management and educational change. We confess, however, to our ignorance of how these things can be either measured or taught. We can only charge that the consumer of this manual must insure that human emotions, insights, and intuitions are added to the procedures that we have outlined -- that the all-important "human element" be included in every interaction between adult and child. To fail to do so will insure a failure of any attempts aimed at educating the retarded child.

Any comments, criticisms, or suggestions that you, the consumers of this booklet, may have would certainly be welcomed by us to guide us in any future revisions.

# ACKNOWLEDGMENTS

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The authors also wish to acknowledge the help of Mrs. Evylin Herrell for translating, organizing, and typing unwieldy manuscripts into readable form.

Although all errors of commission and ommission remain the responsibility of the authors, thanks must be given to Mrs. Catherine Browne, of the North Nashville Day Care Center, for her critical reading of the manuscript, and to her staff, who read and applied an earlier version of it.

Special acknowledgment must be given to the contribution of B. F. Skinner who devised, tested, and made public the theoretical system on which not only this manual but also many other efforts are based. The systematic extension of Dr. Skinner's system has made possible several breakthroughs in treatment procedures with retarded, behaviorally disturbed, and deliquent children and adults. Even more exciting is the fact that the power and breadth of this system is just starting to be realized in the field of educational and psychological treatment programs.

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# PART I: EDUCATING THE MODERATELY AND SEVERELY RETARDED

In this section we will be discussing some of the methods and techniques which have been found useful in the education of retarded children (and normal children, for that matter). We have tried to present this material clearly and concisely, highlighting the concepts and definitions with examples. The interested reader can receive more advanced information from a recent book by G. S. Reynolds: A Primer of Operant Conditioning, published by the Scott Foresman Company, Glenview, Illinois, 60025.

# CHAPTER I

# INTRODUCTION

Do you remember what you felt when you first saw a group of moderately or severely retarded children? Your first impression was probably one of sadness. More than likely, if you were at an institution, you saw some of the children restrained in their chairs -- as they had to be to protect themselves and other children. You probably saw several children rocking in their chairs endlessly, or waving their hands in weird, repetitive movements. You may have seen a child eating his own waste materials, or painting the wall with them. More than likely you were made a little sick by the sight of the deformed bodies, and so much deformed behavior. Certainly, you probably said to yourself, there isn't much that can be done for children like this. They are, after all, quite retarded and probably aren't capable of learning very much. And their weird ways of acting -- you probably felt that these behaviors were just a part of mental retardation, and that nothing could be done to change them.

The idea that mentally retarded children behave the way that they do because they are mentally retarded -- that is, because they have damaged brains -- is not very new. It is, in fact, still the opinion of very many people. There is another point of view, however, and this is what we will talk about in this manual. This other point of view says that mentally retarded children behave the way they do because of the things that have happened to them in their lifetimes. What this means is that the retarded do not behave the way they do because of their damaged brains, but rather that most of their behaviors are a result of how they were treated in the past. In short, they behave the way they do because of the experiences they have had with people and because of the things that have happened to them since they were born. If this is true, and we think that it is, then it should be possible to change the way in which they act. That is, by changing the environment in which they live, we should be able to change the way that they behave. This means that the people who work with mentally retarded children are going to have to treat them differently than they have been treated in the past. They are going to have to treat them in a way that will change their behavior for the better.

The idea that we can change the behavior of retarded children is basic to this paper and to what we will be saying later. What we want to give you is some ways that you can be effective in helping retarded children to live more like human beings. We feel certain that you, as much as we, want this to happen -- we hope that what you read here will be useful in reaching this goal. We also want to say that the way in which this is done really isn't very complicated -- it just means that you have to be a little more alert to the things that happen to the children as a result of their behavior. Above all, you must like the retarded children that you will be working with enough to want to help them. You will find that teaching such children to behave better is a lot of hard work, and that it will take a lot of your time, but that the rewards of helping these children, and seeing their progress, will make your efforts worthwhile.

The goals of this manual can be simply stated -- we want to help you change the behavior of moderately and severely retarded children in positive ways. When you have completed the manual, you should be able to (1) measure the behavior of the child you want to work with, (2) design and carry out an educational program to change the child's behavior in the ways that you want to change it, and (3) measure the child's behavior again, to insure that the educational program was effective. We feel that these steps are necessary for the education of these children, and we want you to be able to complete them quickly and easily.

## CHAPTER II

## MEASURING PROGRESS

To begin with, the techniques that we are going to talk about here are simply those of education. You will be called upon to teach the children in certain ways. What this means, simply enough, is that you will be called upon to change the behavior of the children for the better. This is what we do in our schools every day. You might say that we want these children to be in a school, but a very special school, because we are trying to educate children that are very special. In a lot of ways your job is going to be much more difficult than that of the regular school teacher -- at least she has faster learning children to deal with.

The first step in educating a child is to measure what he can do right now in order to see what we need to teach him. We do not want to teach him something he already knows. When we see what the child can do right now we are giving him a test, and because this test is given before we instruct or train the child we call it a pretest, or "taking a baseline." A pretest or baseline is simply a means for measuring certain things that the child does to find out how often or how well he does them. For example, if we wanted to train a retarded child to use a toilet, we would first need to know if he uses the toilet at all. We would do this by counting and writing down how many times he goes to the toilet and how many times he goes in his pants each day. If we kept a record of how often he had accidents for a week we would have a good idea of how well trained he is. If we were worried because a child spent too much time sitting in a chair we might try to teach him other things to do. But before we start teaching we would give a pretest, which would be a count of the number of minutes the child spends in the chair each day. We would want to make these counts on two or three days, to be sure that we have a good baseline. With another child we could count the number of times he takes off his shirt correctly, or how often he hits another child, or how well he uses his spoon at meals, or how often he comes when called. The point is that we must always determine the level of functioning of the child or we will never know where to start or be able to tell if we have been successful in teaching him something.

After we know what the child is doing right now, we can try to teach him a better way of behaving. The things that you can do to teach a child will be talked about later in detail, so we will skip them for now. Suppose, however, that we have tried to teach a child something like going to the toilet. When we have finished our teaching, we would want to find out how effective we were in getting him to use the toilet. In other words, we would need to give him another test, and because this test would come after he has been taught, we would call it a posttest. This test would be like those given in regular schools every six weeks or every semester, which tell the teacher how much her students have learned. Such a test would tell us if we have been able to change the child's behavior for the better. We would do this the same way that we gave the pretest -- we would measure how often or how well he performs the actions right now, after we have tried to change them. We would measure how often he goes to the toilet now. If he goes a lot more than he did when we gave the pretest, we would know we have taught him something. If he is putting on his shirt all by himself more often, or hitting other children less often, or using his spoon better at meals, or if he comes more often when called, we will be satisfied that we taught the child something that will make him more acceptable to those around him as well as to himself.

You will need to give pretests and posttests from time to time. These tests will take time and effort. However, if we can use these tests to find out what a child needs to learn and then, later, to see if he has learned what we were trying to teach him, all of the extra work will be well worth the trouble.

We have also found that the pretest-posttest method is the only way that we have to show others how much progress has been made. If, for example, a visitor should come to a ward for severely retarded children, the children probably wouldn't look too good to him, even if they had made a lot of progress because of your efforts. To clearly demonstrate your effectiveness requires that the visitor can see where they started, so that he can compare what they are doing now with what they were doing before. The best way to do this seems to be with a pretest-posttest method, which shows clearly how much has been accomplished.

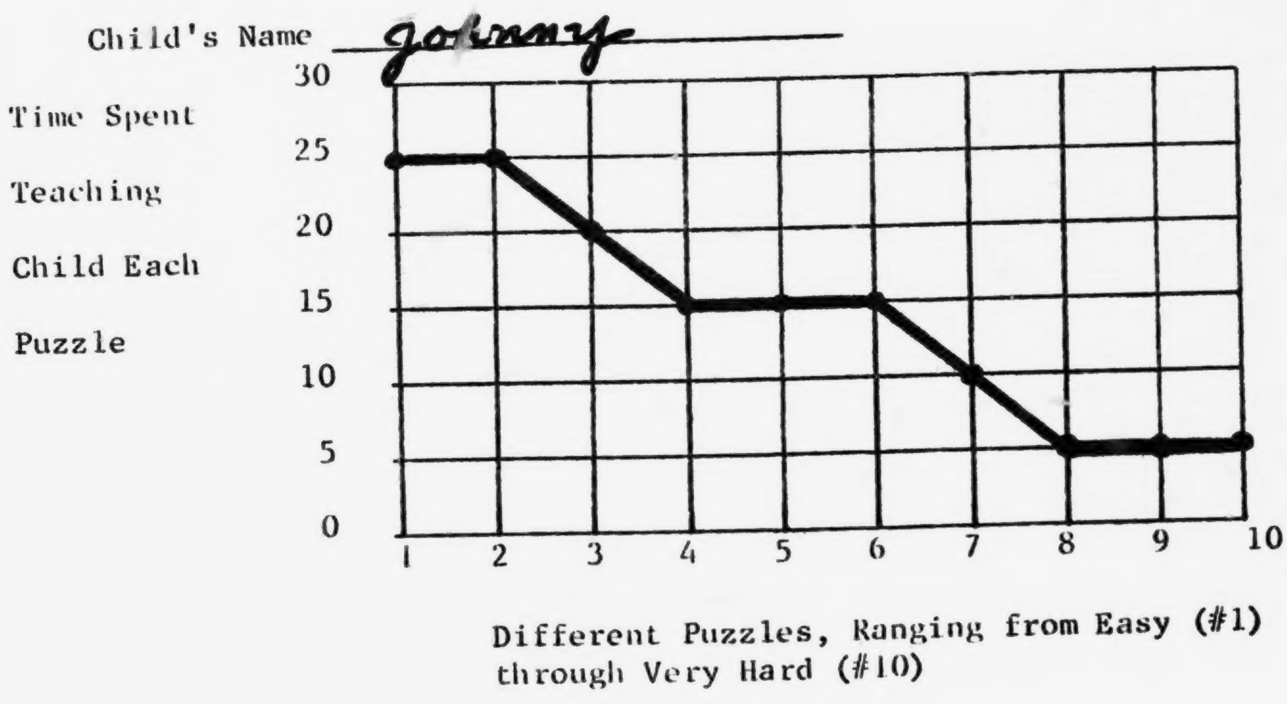
The most important thing to remember about pretests and posttests is that you have to be able to give each child a score -- that is, you must be able to describe his behavior with numbers. It simply isn't enough to say that your child has "learned to play with toys better," or that he is "less hyperactive," or that he is "more toilet trained." You must instead be able to say things like "he played correctly with toys for 12 out of 15 minutes," "he spent 8 out of 10 minutes sitting quitely," or "he went in the toilet 8 times and in his pants 2 times in the last 3 days." Using numbers like this gives a clear indication of exactly what the child is doing, and exactly how much progress he is making. In determining whether what you are doing is effective, you must use numbers like this.

Besides using numbers, the tests you give must also be objective, stable, and reliable. The word objective means that the tests must measure behaviors that you can actually see and record. We can't see how much a child "knows" about colors, for example, but we can see and count how many times he picks a red block out of a pile of different colored blocks when asked to do so. In short, your tests must deal with things you can see, or they aren't objective.

The tests you give, and especially the pretests, must be stable. That is, they must give a good indication of how much the child is doing. We know of one retarded child who hits himself and who must be restrained all the time. We also found out that he hits himself more on some days than on others -- that is, his hitting behavior is not very stable. Let's assume that we measured his rate of hitting on one of his "good" days, and we found that he hit himself 40 times in one minute. After this we put him in a program designed to reduce his hitting and, after one week, gave him a posttest. Let's say that his posttest rate was 40 hits per minute too, and that we happened to measure this on one of his "average" days. By simply looking at his two scores, which were both 40, we would probably say that our program wasn't helping, and that we should either change it or stop trying to work with this child. But, as we said earlier, we happened to give him a pretest on one of his good days, so we may have made a lot of progress that we simply did not measure. If his average rate was really 60 when we gave the pretest, we would have shown a 20 hit decrease in one week -- and this would have been good enough to make us keep trying. The way to solve problems like this is to measure the behavior enough times, and on enough different days if necessary, to get a stable baseline.

The tests you give must also be reliable. By reliable we mean that the child should get the same score on a test if that test were given by two different people at the same time. If the test is not reliable, we can never be sure that progress is being made. In fact, if it isn't reliable we can't even be sure what behavior it is measuring!

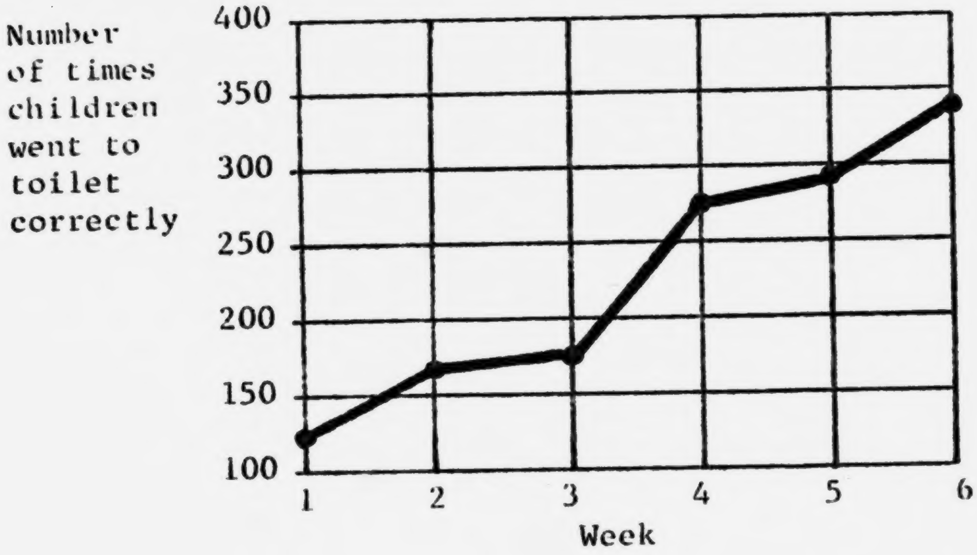
If we have tests that give us numbers that stand for behavior, and that are reliable, objective, and stable, we can easily show others how much progress is being made. One way to do this is through the use of charts or graphs. The graph below, on putting puzzles together, is a good example:



In this graph we are plotting the number of minutes that we have spent in teaching the child each of 10 puzzles. Notice that the puzzles differ in difficulty, ranging from very easy to very hard. We can see from the graph that it took us 25 minutes to teach Johnny puzzles numbers 1 and 2, and only 5 minutes each for 8, 9, and 10. What this shows is that Johnny is "learning how to learn," and that he can now learn a very hard puzzle a lot faster than he could learn an easy one when we first started. This kind of information is, as you can see, invaluable.

Graphs like this can be made on any behavior, if you can measure that behavior in terms of numbers. They can also be made up for groups of children, as well as for single children. The example below shows week-by-week toilet behavior for a whole group of children.

Children Ward "B"



As you can see, the graph shows us at a glance how effective the toilet training program was for a whole group of children. We can see that the children went from about 125 "HITS" the first week to about 340 "HITS" in the sixth week.

Graphing the progress in this way gives a much clearer picture of what is actually happening. We can see at a glance whether or not our programs are working, and whether or not they should be stopped or changed.

# CHAPTER III

# REWARDING AND PUNISHING

Now then, how can we educate these children? It certainly seems to be an enormous task, because they simply aren't very smart, and certainly seem to be very hard to work with. We will begin by talking about some of the most important things to remember when we are working with retarded children.

The first thing to remember is that *what happens to a child for doing things is very important*. In fact, what happens to him immediately after he does something often determines whether or not he will do it again. If something happens to a child that he *likes*, we say that a *reward* has been given to him. If something happens to him that he *doesn't like*, we say that he has been *punished*. This is just plain common sense. Because we do not like to punish the children, we must try to use *rewards for good behavior* as the way to get the children to behave the way we want them to. This makes good sense, because sometimes punishment does more harm than good. What we will be doing is giving the children rewards for behaving in the way that we want them to. This is the same thing that was said at the beginning of this paper -- retarded children behave as they do because of what has happened to them. Now what we are saying is that we will change how they act by changing what happens to them.

A very important thing to remember is that the reward or punisher depends upon the individual child. We know that we will work for a long time if we get enough money for it. You might say that we behave as we do *because* somebody is paying us for doing so. But if we didn't like money (we do!) or if we didn't need it (we do!), then we wouldn't change our behavior if someone offered us money to do so. The same thing is true of retarded children. If you try to reward them with something that they don't want in return for a change in their behavior, then it really isn't a reward, is it?

There are a number of ways to determine what will work as rewards for a certain child. You can try food at mealtime and see if he is willing to work for bites of his lunch. His dessert can be given to him a little at a time when he eats correctly. At other times M&M candies can be used as a reward, or, if he doesn't like candy, you can try peanuts, raisins, sugared cereals (such as Frosty Flakes), or small sips of Kool Aid. If the child spends a great deal of time sitting in a chair (because he likes to sit), have him walk around or work for a few minutes and then reward him by letting him return to his chair for a few minutes. If he likes to play with blocks or puzzles, use these as rewards for doing something you want him to do (usually something he doesn't like to do by himself). Hugs and kisses are rewards for some children and should be used as much as possible. It is easier to hug and kiss a clean child than one that is messy so we should try to keep the children clean and "kissable." Wrestling with the child can be a good reward and can be used when he does something good such as exercising all by himself. As the child learns to do more things the best reward we can give him is to let him continue doing whatever is fun. The activity can be its own reward. If the child likes to work with toys, you should let him continue to do so unless he starts to play with them in the wrong way -- then they should be taken away for a short period of time. Remember that the child should always be praised for doing "good work." Later on, as he learns to do many things, we may be able to reward him with tokens. When he has learned to do something we want him to do we would reward him with tokens, which would be used just like money. He could use his tokens (money) to buy dessert, candy, a ride on a tricycle, or a trip to the playground. He would use his money in about the same way that we do. We buy what we want and need with the money that we earn by working -- the retarded child can do the same thing *after he learns how*.

The important thing to remember is that rewards can be used to change the ways that retarded children act. The *reward rule* is that when a reward is given to a person for a good behavior, he will be more likely to repeat that behavior in the future. This is a good rule to remember, and we think that you will find it very effective in working with retarded children.

## CHAPTER IV

## FOUR WAYS TO USE REWARDS AND PUNISHERS

In the preceding section we discussed the use of rewards and punishers in changing the behavior of retarded children. Before going further we think it necessary to discuss rewards and punishers in more detail.

The first thing to remember is that there are two types of events that can happen to a child (or to an adult for that matter!) -- things that he likes (rewards), and things that he doesn't like (punishers). Taken together, these two types of events are called *reinforcers*.

If a reinforcer is something that the child likes, we call it a reward, or a *positive reinforcer*; if it is something that he does not like, we call it a punisher, or a *negative reinforcer*. Just as the process of *giving* rewards or positive reinforcers is called *positive reinforcement*, so the process of taking away something that the child does *not* like is called *negative reinforcement*. We can, likewise, deliver a negative reinforcer when an undesirable behavior occurs, a process called *punishment*, or take away a positive reinforcer, when the undesirable behavior occurs, which is called *time out from positive reinforcement*, or simply *time out*. To help you keep these four ways of using reinforcers in mind, look at the following diagram:

| | REINFORCER | |
|---|---|---|
| | POSITIVE | NEGATIVE |
| GIVEN | Reward, or Positive Reinforcement | Punishment |
| TAKEN AWAY | Time Out | Negative Reinforcement |

We should also note that we will use the terms reward and positive reinforcement interchangeably in this manual. We prefer the term *reinforcement*, however, because it carries the meaning of strengthening, or *reinforcing*, a behavior. We will, at times, simply use the word "reinforcer." When we do we are referring to a *positive* reinforcer.

There is one more thing that you must learn before we discuss in detail the operations of positive reinforcement, punishment, time out, and negative reinforcement. This is what we call the *contingency*, a term that means that there is some connection between a given behavior and the reinforcers that follow it. We can diagram a *contingency* as follows:

$$R \longrightarrow S^R$$

As you might expect, the arrow indicates that when a given behavior or response (R) occurs, it is followed by a given reinforcer ($S^R$). If the reinforcer is a positive one, or a reward, we would use the symbol $S^R +$; if it is a negative one, or a punisher, we would use the symbol $S^R -$.

It is also important to remember that the situation in which a given response occurs is often a factor in determining behavior. That is, there is a connection between the situations that the child lives in and how he behaves. We can diagram this connection as follows:

$$S \longrightarrow R$$

In this diagram the arrow indicates that certain situations (S) lead to certain behaviors (R). That is, different situations call for different behaviors, and the child often behaves because of the situation he is in. When a particular situation (S) controls a particular response (R), we call it Stimulus Control.

We can now put both of these parts together:

$$S \longrightarrow R \longrightarrow S^R$$

What this says is that certain situations lead to certain behavior, and that positive and negative reinforcers follow these behaviors. We can now state the learning rule: When a behavior occurs in a certain situation, and when a positive reinforcer follows that behavior, then the behavior in question will be more likely to be repeated when the child is in the same situation again. In the same way if a negative reinforcer, or punisher, is given after a behavior occurs in a given situation, then the child is less likely to repeat that behavior when he is in the same situation again.

This is really a fancy way of saying what you already know -- that behavior can and does change as a function of the consequences which the child receives for it. There are times, however, when it is very helpful to be able to break complex behaviors down into $S \longrightarrow R \longrightarrow S^R$ components, as you will see later in this manual. Let's see how the $S \longrightarrow R \longrightarrow S^R$ diagram works in positive reinforcement, punishment, time out, and negative reinforcement situations.

*Positive Reinforcement*. We have already talked about giving positive reinforcers, or rewards, for good behaviors, and how we can increase good behaviors by using them correctly. As another example of this, imagine that you show a child a picture of a house, and that you ask him, "What is this?" If he replies "house," you reward him by saying "that's right -- good boy," or something like that. Now, then, in terms of the contingency diagram, the picture of the house and your question, "What is this?" is S, or the situation, his reply "house" is R, or the response, and your statement "that's right -- good boy" is $S^R+$, or the reinforcer. The learning rule applied here tells us that the child will, in the future, be more likely to reply "house," when you show him a picture of a house and ask him to name it. He will, that is, be more likely to make the reply *because you gave him a positive reinforcement* for making the reply in the past.

*Punishment*. Punishment is a means for getting rid of undesirable behavior. Most psychologists agree that it is less desirable to use than rewards, and some feel that it is less effective as well. There aren't many parents or teachers who like to use punishment, and it is rarely recommended as a procedure. But, because it is sometimes necessary to use punishment, we will discuss it here.

Imagine that you have a child who likes to climb on top of things, such as chairs, bookcases, and so forth, and that these climbing behaviors are very dangerous. You may decide to get rid of them by using a punisher -- you might, for example, say "NO!" very loudly and immediately spank the child, when he starts to climb. If a spanking is a punisher for the child (and there are some children for whom it is not), you would expect the child to be less likely to climb on things in the future. In this case the objects to be climbed on are S, or the situation, the climbing behavior is R, or the response, and your use of "NO!" and spanking is $S^R$-, or the negative reinforcer. The learning rule tells us that when a response that occurs in a given situation is followed by a punisher, it is less likely to happen again when the child is in the same situation.

*Negative Reinforcement*. Negative reinforcement, you will remember, is the process of applying a punisher until a desired response occurs, at which time it is taken away. Because we do not like to use punishers, and because negative reinforcement requires that a punisher be applied continuously for possibly long periods of time, this procedure is not used very often. We feel, however, that you should know something about it, because you may sometimes have extreme cases for which extreme procedures must be used. Whenever punishers are used, however, you should have supervision by a qualified person.

Perhaps the best example of negative reinforcement is a toilet training study by Giles and Wolf,* two psychologists from Kansas. In

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*Giles, David K., and Wolf, Montrose M. Toilet training institutionalized, severe retardates: An application of operant behavior modification techniques. *American Journal of Mental Deficiency*, 1966, *70*, 766-780.

trying to toilet train a cottage of severely and profoundly retarded children, they found that none of their procedures worked for some of the children. As a last resort they used the process of negative reinforcement. To accomplish this they put a rope around the waist of the children, and tied the other end to the toilet. They then watched the children carefully, and waited until they went to the bathroom in the toilet. At this time the children were not only released (termination of the punisher), but were praised and given rewards. This was the only procedure that they could find that worked with these particular children.

In this case being tied to the toilet is S, the situation, going to the bathroom correctly is R, the response, and being released and receiving positive reinforcers is $S^{R+}$, the reinforcement. Giles and Wolf were able to show that this procedure was effective in toilet training children that they could not train by any other positive reinforcement procedure.

Time Out. The time out procedure requires that a positive reinforcer be taken away when a child engages in an undesirable behavior. Time out is often difficult to separate from punishment and, like punishment, results in a reduction in the undesirable behavior.

As an example of time out, imagine that you have a child who likes to sit at a table with his friends and color in a coloring book. At times, however, he picks up a crayon and throws it across the room. When he does this, which is a behavior that you don't want him to do, you might take him away from the table and put him in his room for five minutes or so. Here sitting at a table and having a good time is S, the situation, throwing the crayon is R, the response, and being taken away from the table is $S^R$, the reinforcement or, in this case, the removal of $S^R$.

# CHAPTER V

## HOW TO GIVE POSITIVE REINFORCERS AND PUNISHERS

There is another important thing to remember about reinforcers. This is that they must be *given exactly when the child is doing the things that you do or do not want him to do*. We can wait a whole month for our paycheck, because we *know* that it will come on the first of the month, because we *know* what we have done to earn it. The retarded child can't tell himself these things, however, so if reinforcers aren't given to him *immediately*, he won't know what he has done to earn them. The best way to deliver rewards or punishers is to give them *when the child is actually doing what you want him to do or what you don't want him to do*. This will tell him very clearly that what he is doing is either right or wrong, and he will be more or less likely to repeat the behaviors in the future.

If you don't reinforce the child while the behavior is still going on, or immediately after it happens, you run the risk of reinforcing some other behavior that you may not want to change. One thing about behavior is clear -- it is *always* going on. And we know that reinforcers work on the behaviors that are reinforced -- that is, the behaviors that are going on when the reinforcer is delivered. So, if you are late in giving a reinforcer, you will wind up reinforcing, and strengthening, some other behavior.

We should point out, however, that children can and should learn to delay their reinforcers. One way that this can be done is with tokens, as we talked about earlier.

# CHAPTER VI

# WITHHOLDING REINFORCERS, OR EXTINCTION

Giving rewards is the easiest and fastest way to get a child to do new things and to do better things more often. Sometimes, however, we have a child who frequently behaves badly. For example, we know of one little girl who always comes up behind adults and hits them in the rear end. How can we use reinforcers to get rid of this bad behavior? To begin with it might be that this girl is hitting adults because of the reinforcers that she gets for hitting. It is true that she almost always gets the adult's attention when she hits. It's very hard to ignore a little girl who hits you in the rear end. We would guess that this attention is probably enough of a reward for her to keep on hitting. The easiest way to get rid of this behavior is just to stop giving her these rewards. This is what we call extinction -- we let the child hit, but we don't reinforce with our attention. If we have guessed correctly about our attention being a reward, we should find that her hitting behavior extinguishes, or goes away. Notice, too that we would probably give a pretest before we start ignoring her hitting, and then we could tell if our attention really was a reward for this particular behavior. We think that you will find that many of the bad behaviors you see will simply go away if you stop giving the child reinforcers for doing them.

Some children even like to be scolded for behaving badly. Scolding is a reward to them, and we know if we reward them for a certain behavior they tend to repeat that behavior. So we cannot take for granted that all children are punished if you scold them. Some children like scolding so much that they will behave badly more often just to get you to scold them. (This may be because they haven't received very much adult attention in the past.) The trick is to start giving the children your attention when they are doing good things instead of when they are doing bad things. You are probably the most important reward that we can find for retarded children, and you must learn to use yourself in the best ways, as a reinforcer.

The trick in withholding reinforcers is not to take your attention away altogether, but use it only to reward good behavior. For example, if a child eats string a great deal of the time, then he should be watched carefully and be given your attention only when he stops eating the string for a few moments. If your attention is a reward, and you give it to him when he is eating string, then he will continue to eat string. If you withhold the reinforcer for string-eating, but pay attention to him when he is not eating string, he will eat string less and less. Another example of this would be when a child who sits in her chair almost all day long gets out of her chair and you go quickly to her, praise her for getting up, and find something interesting for her to do. If your attention is a reward for her, she should start to spend less time in her chair.

In general, for every behavior that you consider annoying, hurtful to other children, or hurtful to the child, there is some behavior that could occur that would replace the bad behavior. In withholding rewards we don't just stop giving rewards for bad behaviors. At the same time, we must give rewards for good behaviors. Just getting rid of bad behaviors is never enough, because they will usually just come back unless the child has learned something better to do.

There is one more important thing to remember about extinction. When you start to extinguish a behavior you can expect that the behavior will actually increase in the beginning. For example, when you turn on a light switch in a dark room, you usually expect the light to come on. That is, you have in the past been reinforced by light for flipping light switches. But what happens if the bulb is burned out, and the light doesn't come on? We don't know what you do in cases like this, but we know that we usually flip the switch up and down several times, and pull and push on it. Whenever a reinforcer that has consistently followed a behavior no longer follows that behavior, you can expect that the behavior will first increase, before it starts to decline. In other words, if you get the effect opposite of what you want when you try to extinguish an undesirable behavior, stick it out! It may take awhile for the child to accept the fact that he will not be reinforced for it any more.

It is often very difficult to figure out which reinforcers are operating to keep a behavior going, so that they can be withheld. There are, as well, some behaviors that are self-reinforcing, so that it is nearly impossible to find ways to get rid of them using the procedure of extinction. We feel, however, that a good number of the deviant behaviors are maintained by external reinforcers, and that these can be identified and withheld. Sometimes this will require that everyone who comes into contact with the child will have to cooperate, so that he gets absolutely no reinforcement for the behavior. Remember, too, that reinforcers do not have to be given for every occurrence of a behavior. Behaviors that have been reinforced only occasionally are usually much harder to extinguish.

# CHAPTER VII

## LETTING THE CHILD REWARD HIMSELF

There are many other ways to reinforce children for behaving correctly. One of the most important ways is to let him do what he wants to only after he has done something that you want him to do. For example, maybe one of the children likes to sit in his chair and rock for most of the day. We might start by letting him sit and rock only after he has spent ten minutes walking around. Later on we might require fifteen, and then twenty minutes of walking before we let him sit and rock. We would hope that walking around would become a reward for him all by itself. Then we would have him walking around because he likes to walk around, and not because he gets to sit down afterwards. The point is that sometimes you have to get the children started -- we all know that you can lead a horse to water but you can't make him drink. But it is also true that you'll never get him to drink until you have led him to water. In the same way we have to get the child started in the things we want him to do before he will ever do them by himself.

We feel that letting a child reward himself is one of the most important things for you to learn how to do. For some children it is almost impossible to find a reinforcer -- we know some children who don't like candy, or Kool Aid, or the attention of an adult. For these children it is pretty hard to find a reinforcer that works. But it is almost always possible to find some activity that they like, and to use this as a reinforcer. The point here is that the child is allowed to do what he wants to do only if he does something you want him to do first.

# CHAPTER VIII

## HOW OFTEN SHOULD REINFORCERS BE GIVEN?

Another important thing to remember about reinforcers is that they are more effective if they are not given every time that the good behavior happens. This is the same thing that goes on when people play slot machines. If they received a small return almost every time they put a nickel in, they probably wouldn't play the machines very long. But they will put their last nickel in if there is a chance of getting a very large return, even though this doesn't happen very often. (in our own experience it never happens!) The same thing is true of retarded children -- their reinforcers should come only after more than one occurrence of the good behavior. We know from research that intermittent reinforcement does result in higher rates of behavior.

You may find it necessary to give fairly large rewards quite often when you first start to teach the child something. For example, if you wanted to teach him to tie his own shoelaces you would probably give him frequent rewards for his first tries. This is the same as priming the pump -- he may need quite a bit to get him started. You should always try to reduce the number of rewards that you give him, however, until he is tying his shoelaces without any reward at all.

You should also remember that the reinforcers should be given only when the behavior actually gets better. For example, if a child who is learning to work a puzzle has just gotten a reward for doing three pieces in a row, he would not receive another reward until he has done four pieces in a row. After four, we would require five, and so on. That is, the child must always do a little bit better before he gets any reward.

# CHAPTER IX

# SHAPING BEHAVIOR IN SMALL STEPS

What we have just said brings us to another important part of this kind of education. In teaching the retarded child we usually teach him bit by bit. For example, if we wanted to teach him to work a puzzle, we wouldn't try to teach him to do the whole puzzle all at once. Instead, we would start with one piece and make sure that he knew where it went before going on to the second. We would continue this way until he knew all of the pieces. The same thing is true in teaching a retarded child to dress himself. We would not give him his pants and tell him to put them on. Instead we would start by putting them on his legs and pulling them almost all the way up, teaching him to just pull them up the last inch or so to start with. Gradually we would teach him to pull them up further and further, until he could pull them up from the floor. Then we would start teaching him to put on one leg of the pants, after we had already put the other one on for him. Finally, we would teach him to put on both legs and pull them up by himself. It is very important to notice here that we always teach good behavior in small steps. This is called shaping. You must also remember that we usually start from the end -- that is, we usually start at the end of the behavior that we are trying to teach. In the case of teaching the child to put his pants on, we usually start by teaching the last action before the pants are all the way on, that is, with pulling them up the last inch or so. The exercises in the back of this book have a lot of examples of shaping and how you start with the last behavior first.

The reason for shaping is very simple. We don't think that anyone, including ourselves, learns large amounts all at once. Learning seems to be a gradual affair, and for a large, complex behavior to be learned it seems that it must be learned a bit at a time. Your job is to break the behavior that you want the child to master down into small parts, and to teach only one part at a time. You should make sure that each small part is completely mastered before you go on to the next part, and you should be sure to frequently review all of the parts that the child has already learned.

# CHAPTER X

# USING SIGNALS

You will remember that we discussed the symbols $S \longrightarrow R \longrightarrow S^R$ earlier, and that we said that when a behavior (R) is reinforced ($S^R$) in a given situation (S), that it is then more likely to happen again, in the same situation, in the future. Since then we have been discussing, mostly, the $R \longrightarrow S^R$ or contingency, part of the diagram. In this section we want to deal with the relationship between S and R, or between the environment and behavior. We have already stated that when a given situation controls a given behavior, we say that stimulus control is in effect.

We all know that certain events, or stimuli, control behavior. If you are standing on a street corner and the traffic light is red, the red light is a stimulus that tells you not to walk. When it turns green it becomes a stimulus for walking. A large part of changing behavior is in building up stimuli so that they do control behavior. We call this building stimulus control. When a stimulus comes to control behavior we call it a signal.

One very important signal is the word "NO." It is doubtful that "NO" would at first have any effect on their behavior. In fact, we would predict that saying "NO" would sometimes serve as a reward for their bad behavior. How then can we make "NO" into an effective signal that will tell them to stop behaving badly? The easiest way is to say "NO" and, at the same time, do something that the child doesn't like. At home this would probably be done by spanking him or something like that. Because you cannot spank a child who is in an institution, we would suggest putting him into a chair and making him be quiet for a little while, making sure to say "NO" as you put him into the chair. (Notice that being placed in a chair must be something that the child does not like.) Or you could say "NO" and, at the same time, take something away from him that he likes. If you do this several times, we would predict that the word "NO" would become punishing in its own right, and would serve as a signal to stop bad behavior. It should also serve to stop behaviors that it has never been used on before -- that is, it should spread to other undesirable behaviors.

The same thing is true of the word "GOOD." At first the children would have no idea of what "GOOD" means, but if you said "GOOD" several times when they were behaving correctly, and at the same time gave them a reinforcer that they really liked, such as your attention, we would predict that "GOOD" would become a powerful reinforcer for good behavior.

With some children it may be necessary to do the pairing of "GOOD" with food, for example, candy, to build its effectiveness. In this case it is best to always work toward getting away from using candy and other food rewards.

It is often necessary to build other signals as effective commands. For example, if we wanted to teach a retarded child to use the toilet, we might start by teaching him to go into the bathroom when we give him the signal, "Go to the bathroom." We would, or course, teach this in small steps and give the child payment each time he came closer to going into the bathroom on command. In the same way we would teach him to undress himself to the signal, "Down with the pants," and so on. It is important to always use the same words when you give these signals, because most retarded children won't know what you mean if you change them. You should also always give your signals in a firm, even voice, loud enough that he can hear you easily.

## CHAPTER XI

## BUILDING CONTROL

In our experiences in teaching severely and moderately retarded children we have found that we often have to deal separately with two things: (1) building reinforcer control and (2) teaching specific behaviors. Put differently, we feel that having some degree of control over the behavior of a child is necessary *before* it will be possible to teach him better behaviors. Although this is not true in every case, it seems to us that many severely and moderately retarded children are simply out of control -- they do not try to learn, and do not follow the instructions that we give them. If we can get these children to try, we will be in a position to teach them better ways of behaving. We define control in terms of how much the child tries to do the things that we want him to do, whether it is to learn how to dress himself, how to play with toys, or to follow the instructions we give him.

We believe that the problem of control is a problem of reinforcement. Unless you are able to find a powerful reinforcer for each child, it is unlikely that you will be able to teach him better ways of behaving. A lot of your job is, simply enough, to find powerful reinforcers for each child.

We have pointed out earlier that we prefer to use ourselves, rather than things like food and candy, as reinforcers. There are times, however, when you must begin with food reinforcers, because the child simply isn't interested in you as a person. We feel, however, that if you are genuinely interested in the child, and if you give him your attention and affection together with the food type reinforcers, you will find that he will soon respond to you without the need for food reinforcers.

The same thing is true of the activities that he engages in. Our goal, really, is to have the child engaging in good activities because he enjoys them, and not because he is getting candy for engaging in them. In the beginning, however, you may be forced to use candy to get him started. We always hope, however, that the activities themselves will soon become reinforcers in their own right, and that you can discontinue the use of candy reinforcers.

The first activity in the next section deals with teaching a child to sit quietly in a chair. We feel that it is a very important activity, and that each child should be able to sit still and pay attention for at least short periods of time. It is, at the same time, an activity that you can use to build control over his behavior. What your goal is in building control is to have him do the things that you want him to do because you want him to do them -- not because he wants to do them. Once you have accomplished this important first step you will be ready to move on to more complex behaviors.

## CHAPTER XII

## SUMMARY

1. Much of the behavior of mentally retarded children is a result of the things that have happened to them in their lifetimes.
2. We can change the way that retarded children behave by changing the environments in which they live. It is especially important to change the things that happen to the children for doing the things they do.
3. To be able to tell if we are effective in changing the behavior of the child we work with, we must use a Pretest-Education-Posttest method. We must know where the children start and where they finish to tell if we have been effective.

4. The Pretests and Posttests we use must be objective (deal with observable behaviors), stable (indicate clearly what the child is doing), and reliable (two observers get the same score when they measure the same behavior at the same time).
5. The best way to change the behavior of retarded children is to use rewards, or positive reinforcers, for good behavior.
6. Punishers can be used to get rid of undesirable behaviors in extreme situations, when they are given when the undesirable behaviors occur.
7. Negative reinforcement is a procedure in which a punisher is applied continuously until a desired behavior occurs, at which time it is terminated. It can be used to increase the rate of a desired response.
8. Time out from positive reinforcement is a procedure in which a positive reinforcer is taken away when an undesirable behavior occurs. It can be used to get rid of undesirable behaviors.
9. The contingency is a relationship between a given response and a given reinforcer. When a reinforcer always or usually follows a given behavior we say that it is contingent upon that behavior.
10. Stimulus control refers to the fact that certain stimuli serve to control certain behaviors. When a given stimulus controls a given behavior, we say that there is stimulus control over that behavior. Much of the education of retarded children is in building new stimuli so that they control behavior.
11. Different children like and dislike different things. To change the behavior of any retarded child we must first find out what his reinforcers are.

12. Reinforcers should be given while the child is actually doing the thing that you want him to do.
13. The best way to get rid of a bad behavior is to withhold any rewards that he was getting for doing it.
14. *You* are probably the most important reinforcer that the child can receive. *You* must use your attention effectively.
15. We can let the child reinforce himself by allowing him to do what he wants only after he does what we want him to do.
16. Reinforcers should not be given every time that the good behavior occurs, except at first. They should be given only occasionally, just like a slot machine.
17. Reinforcers should be given only when a better behavior than the last one for which a reinforcer was received occurs.
18. It is usually best to teach a hard behavior in small steps, and to deliver a reward for each step that the child takes that is closer to the desired goal.
19. When we teach a hard behavior in small steps, we usually start at the *end*. That is, we usually start with a small behavior that is close to the end of the hard behavior and gradually move to the beginning of the behavior.
20. It is very helpful to develop a set of signals that we can use to tell the child what to do and what not to do. To do so you must give the signal and reinforce the desired response in its presence.
21. There are two main aspects to educating retarded children: (1) building reinforcement control and (2) teaching specific activities. The first of these must be accomplished before you can teach the child specific behaviors.

## PART II: ACTIVITIES FOR THE MODERATELY AND SEVERELY RETARDED

The following pages contain 23 specific activities that can be used with moderately and severely retarded children. We have tried to make the instructions for each activity as comprehensive and precise as possible. You should feel free, however, to modify the procedures as you see fit--each child is indeed a special case, and will probably require special procedures.

Appendix C contains sample record sheets for each of the 23 activities. Again, we must emphasize the importance of keeping adequate records on the progress of each child in each activity. We hope that the sample record forms will be of help to you in this endeavor.

We feel it necessary to point out that many of the exercises that follow are written in a frankly cold step-by-step procedure. Many of the behaviors described appear as almost mechanical or robot-like responses of the child. In addition, the signals that are recommended for use on occasion sound like harsh commands. Perhaps these are false leads, for in actuality they are stated in order to insure consistency and pre-planned interaction with the child. It is our hope that the tone of voice used with the child will be gentle, and the reinforcers given with sincere enthusiasm.

We have heard it said that a successful user of the teaching techniques described in these exercises is able to be angry upon the occurrence of a wrong response and almost instanteously joyous when the child emits a better response in the next moment. This movement of emotional behavior from anger to joy is not as robot-like as it sounds. If the child's deviant and low-functioning behavior is a punisher, (i.e., aversive to you) and signs of progress are payments for you, then you will have no trouble being angry with the wrong responses and joyous with the correct responses. The key to maximizing the number of payments given to the child is to provide him with a sequence of learning steps that he can easily preform. The following exercises are only a beginning in that direction and if you are to be successful you must add to and change the steps described in the following exercies as determined by the child's behavior. As Ogden Lindsley says, "The child is always right."

## ACTIVITY #1 - SITTING QUIETLY IN A CHAIR

A. TASK DEFINITION: Sitting quietly in a chair is a very important behavior for retarded children to have. Unless you can get the child to sit quietly, it will be very difficult to teach him to do other things, like working puzzles or coloring. The goal of this educational program is to have him sitting quietly in a chair and working on a constructive activity for a period of five minutes.

B. PRETEST: As discussed earlier, we first want to know how often the child sits in a chair and works at a job before we start teaching him to do this. It is easiest to do this with a stopwatch. One way is to seat the child at a table with some materials, such as coloring books or puzzles, on it. Using the stopwatch, watch what he does for about twenty minutes. Break each minute into 15 second quarters, and mark a "1" down on paper for each 15 second period that he spends sitting quietly and working. Mark a "0" down on the paper if the child tries to get out of the chair, does get out of the chair, or stops working with the materials. When you are finished, you will have a series of zeros and ones, indicating the amount of time that the child spent working and the amount of time that he spent doing other things. It is best to leave a space between every four marks, which will separate the minutes. This makes your baseline easier to read. A final report might look something like this:

1101 0110 0010 1000 0000 1000 0000 0010 0000 0000

This tells us that the child was working during the first 30 seconds, was not working during the next 15 seconds, and returned to work for the last 15 seconds of the first minute, and so on. We can also see that the child only worked for 9 out of the 40 15 second periods--or for a total of 2 minutes and 15 seconds out of the total 10 minutes. We have included a sample record sheet in the back of this manual which you may find helpful.

C. SUGGESTED EDUCATION PROGRAM: In this case it would probably be best to try either food reinforcers or your attention as a reward for sitting and working. To use yourself as a reinforcer, you should praise the child ("Good boy; that's very nice," and so on) about every 10 seconds if he is working. When he stops working you should just ignore him. If he does a particularly good job you should be quick to praise him right away. If you do use food reinforcers, you should always praise the child when you give them to him.

If he does start to stray away from his work you should wait until he goes back to work, and then praise him for doing so. If the child becomes disruptive and won't sit down at all, take both of his hands and hold them crossed across his body for a few minutes. Continue to hold him if he cries or throws a tantrum and release him only when he calms down. The point to remember is that fighting should lead to being held longer, while sitting quietly should lead to release. If you were the child, which would you prefer? While you are holding him do not talk to him at all. When you have released him be sure to praise him for picking up a crayon or anything else he does that is related to work.

Continue to give him reinforcers for working, giving these about every ten seconds. If he becomes very disruptive again repeat the holding procedure. Here you can see that the child gets a lot of reinforcers for sitting quietly and working, but none for trying to get up or throwing a tantrum.

Remember that it is best to not be very regular in giving reinforcers for working. That is, it is better to give them at different intervals, instead of exactly every 10 seconds. As he sits for longer and longer time periods, you should also make him work before giving him a reward.

You can repeat the baseline procedure at frequent intervals if you make sure that your reinforcers are maintaining the child's "sitting and working" behavior. These will be the posttests for this program.

## ACTIVITY #2 - BUILDING PUZZLES

A. TASK DEFINITION: We can use wooden puzzles to teach the child many things, for example, to tell the difference between different colors and to tell the difference between different shapes. Making a puzzle requires the child to select a single piece from a group of pieces, and place it in the correct place on the puzzle board. (Note: wooden puzzles having between five and twenty pieces should be used in this activity.) Each puzzle piece, in turn, must be placed in its correct spot until the puzzle is completed. It is best to have around 10 puzzles to use, that range from very easy to very hard.

B. PRETEST: We take a baseline in this activity by placing the pieces in a pile between the puzzle board and the child, with the child seated at a table right in front of them. The child is then told to, "Put this puzzle together to make a (name whatever it is that the puzzle makes)." We would usually give the child four tries at making the puzzle, and we count the number of pieces that he gets right. The total number of pieces that he puts in right determines the baseline for this activity. If he gets the puzzle all right on each of the four tries, you should find a harder puzzle for him. (If he works all the puzzles given to him, he really doesn't need training with puzzles, does he?)

C. SUGGESTED EDUCATION PROGRAM: In puzzle building we usually start from the "end" to teach the child how to do it. That is, we start with the puzzle already completed except for the last piece. Usually the piece that we leave out is one that is easiest to put in when all of the other pieces are in place.

To begin, then, build the puzzle except for the easiest piece, and let the child put this piece into position. You may have to guide his hand in doing this but should always let him do as much as he can by himself. When the piece goes into the puzzle, be sure to give him a reinforcer. Remember too that this reinforcer will be most effective if it is given exactly when the piece falls into place. Your reinforcer can be candy, or your praise, or anything else that the child really likes.

Repeat doing this with the single puzzle piece until the child can put it in easily and quickly. Then remove the first piece and a second piece that would also be fairly easy to replace. Have the child replace the new piece (the one he has never done before), and immediately give him a reinforcer. Then let him put in the piece that he has already practiced with and give him another reinforcer. Keep using these two pieces until the child can do them easily and quickly.

Next take out a third piece and teach him to put this one in, having him do the other two after he gets this one in correctly. Continue this process until the child can put all of the pieces together if they are given to him in a pile. It is best to have him always follow the same order with the pieces, at least at first.

After the child is able to do the first puzzle easily, we would go through the same process with another puzzle--and then a third and a fourth puzzle. Usually we make each puzzle a little bit harder than the last one, and we usually make him do a little bit more by himself before we give him rewards. If the training is successful, you will find that it takes fewer and fewer tries on each puzzle before he can do it by himself.

We can test the effectiveness of our program at any time by giving the child a new puzzle and letting him try it by himself, just as we took the original baseline. It is a good idea to do this once in a while, to see if you are making any progress.

## ACTIVITY #3 - COLORING

A. TASK DEFINITION: Coloring is a good activity and can be used to help teach the child the names of colors, animals, and objects. Coloring requires that the child be able to correctly pick up and hold a crayon, and to be able to color with it. This means that the child must be able to control where it goes, and not simply make marks on the paper.

B. PRETEST: Seat the child at a table and place a coloring book or a piece of paper and some crayons in front of him. Observe what he does for at least 10 minutes, after you tell him to "Color the book (paper)." If you save the pages that he colors on you will have a record of his activity to compare with how well he does after you have tried to teach him to color.

C. SUGGESTED EDUCATION PROGRAM: We usually start by putting a crayon in the child's hand, if he does not pick it up himself, making sure that he holds it correctly, and gently guiding his hand as much as is necessary to get him to color with it. We then gradually withdraw our support of his hand, until he is coloring all by himself. If he starts acting up during the process, or if he yells or throws his crayon, simply remove the coloring book and make him sit still until you count to 10 or until he "slows down" and stops crying. Each time that he shows an improvement in his coloring be sure to give him a payment, either in the form of praise or, if necessary, with a piece of candy.

D. MEASURING PROGRESS: If you save the books that the child colors, and if you write down the date that he colors each page, you will have a complete record of how much better he does as time goes on. Another way to do this is to give him a single page to color once a week or after each training session and then save these sheets.

We recommend that you begin with pictures that are fairly simple, and which have heavy dark outlines. (Three examples of good pictures to start with are included in the sample forms section.) We also suggest that you begin by teaching him to color in straight lines, and gradually move to coloring rounded figures. You should gradually teach the child to use different colors, and gradually give him harder and harder figures that have lighter outlines to color. Finally, you should teach him to use the correct colors, such as red for apples, blue for sky, and so forth. If you save some of the pictures he colors, you will be able to see how well he is progressing in these areas.

## ACTIVITY #4 - PLAYING WITH TOYS

A. TASK DEFINITION: Many retarded children don't have many toys to play with--and for a very good reason, because they either destroy them or can't play with them correctly. The goal of this activity is, of course, to have the child playing with toys much like a "normal" child would. That is, they should use dolls, wagons, trucks, blocks, and other toys just like any other child would. This means that a little roughness is OK, but that they should not destroy the toys in a matter of a few minutes.

B. PRETEST: You can use the same set of toys for taking a baseline for all of the children, so that you will be able to see how different they are in the way that they play with toys. The set we recommend consists of a doll, a big truck, a set of blocks, and a small wind-up toy. Place these on the floor and have the child brought into the room. The best way to take a baseline is to record the amount of time that he spends playing nicely with the toys while watching him for 10 minute periods. The easiest way to do this is with a stopwatch, turning it on whenever he is playing correctly and turning it off whenever he starts using the toys incorrectly, like banging them on the floor or throwing them, or when he just ignores all of them. You should repeat this baseline procedure at least three times on different days to get a good measure of how well he plays with toys. It would also be helpful if you counted the number of times that he plays with them in a destructive way, such as throwing or banging them. Getting rid of this kind of behavior is very important to getting him to play correctly.

C. SUGGESTED EDUCATION PROGRAM: To teach the child to play correctly with toys you must first find out what can be used as a reinforcer. This can be either a food reward or, preferably, simply your praise. Then give him a toy and watch what he does. If he begins playing with it nicely, reinforce him--especially when he seems to be getting better in his playing. If he starts to bang it on the floor or throw it or break it, take the toy away from him for 20 seconds or so, at the same time telling him "NO!" Then give the toy back and let him try again. If he chooses to ignore it and do other things, you can either leave him alone or ask him to come back and show him what he can do with the toy. You might, for example, show him how to wind the wind-up toy, make the truck roll across the floor, or how to put the doll to bed correctly. Whenever he gets better be sure to praise him and, if necessary, give him some candy or something else that he likes. The point is that playing correctly should get him a lot of rewards, not playing at all should get him nothing, and playing badly should result in his losing the toys. Whatever you can do to make it more interesting for him is all to the better.

You can take a posttest at any time by simply repeating the pretest procedure.

## ACTIVITY #5 - PLAYING WITH A BALL

A. TASK DEFINITION: Playing with a ball includes a lot of different kinds of activities. The child can be taught to throw, kick, bounce, roll, and catch the ball. Each of these activities should be controlled by various commands or signals that tell the child what he is to do.

B. PRETEST: With the pretest we want to find out how many of the ball playing activities the child can do when we tell him to do them. The record may look something like this:

| Command | Correct | Incorrect | Total |
|---|---|---|---|
| "Throw the ball" | 111 | 1111111 | 10 |
| "Bounce the ball" | 1 | 111111111 | 10 |
| "Roll the ball" | 11111 | 11111 | 10 |
| "Kick the ball" | 1111111 | 111 | 10 |
| "Catch the ball" | 11111111 | 11 | 10 |

If we keep track of both incorrect and correct tries, we will be able to tell what he does every time, part of the time, or never. You should also use reinforcers (praise, candy, and so forth) during the baseline taking to make sure that he is trying to play with the ball correctly.

C. SUGGESTED EDUCATION PROGRAM: We usually teach ball playing to the child by using a large ball and at least two people to work with the child. The easiest form of ball playing is rolling the ball back and forth on the floor. To accomplish this the teacher should sit about five to six feet away from the child with her legs spread in a "V" position. The second teacher should have the child sit facing the opposite direction with his legs spread; the ball is then rolled back and forth between the first teacher and the child with the second teacher physically prompting whenever necessary and giving reinforcers for successful approximation of rolling and catching the ball. This procedure should be continued until the child spontaneously rolls the ball to the teacher, catches it, and holds it for a few moments and then returns it. At this point it is often interesting to substitute another child for the teacher and to have the two children roll the ball back and forth several times. One interesting question is whether the children will continue the activity when the praise or other reward is withdrawn. This gives some indication of whether the children enjoy the activity.

A second more complex task is bouncing the ball. Actually, a bouncing ball is easier to catch than one that is thrown. Here again the first teacher stands about six feet away and faces the child while the second teacher stands behind the child to prompt and to pay off good behavior. The ball is bounced carefully by the teacher to the child so that it reaches the child after one bounce. If necessary, the child should be guided to throw the ball back to the teacher. However, if the child does this spontaneously, without help, so much the better. Reinforcers should be used as little as possible in this exercise, although the first teacher should show as much enthusiasm as possible when the child catches or throws the ball correctly. The idea here is for the teacher to play with the child and be somewhat excited and amused by the activity. As the child is doing this, another child, who has already been trained, can be substituted for the teacher. Now, the single teacher operates as the reinforcer. In this role, the teacher can consider herself to be a cheerleader watching a game so that she cheers when either child makes a very good play. Cheering makes the game more fun to the children and will operate as a model for developing their own enthusiasm about play.

The next training task that many children enjoy is kicking the ball. In this case the teacher stands about eight or ten feet from the child and rolls the ball very slowly in the direction of the child. The child is told to "kick" the ball and, if he does not do so spontaneously, the second teacher should move his leg and the moment he kicks the ball, she should say "good" in an enthusiastic way. The second teacher should give only as much help as is necessary to get the child to kick the ball. The amount that the child is reinforced should be related to the amount of enthusiasm the child shows in the task. If the child is not enthusiastic, then he should be reinforced as much as possible, in order to associate positive reinforcement with the game. If the child is very enthusiastic and quite spontaneous with his kicking, then no reinforcement other than an occasional cheer is necessary to maintain the behavior. The final task is catching the ball, and the training here can follow the same procedures as in bouncing the ball, described above.

In every one of these exercises the size of the ball should be smaller and smaller as the child does the task better. So while you might start with a ball about the size of a beach ball, when the child has learned the skill he should be able to catch, bounce, throw, and kick a ball about the size of a soft ball.

The posttest in this exercise is simply a repetition of the pretest in which you score several different examples of throwing, rolling, bouncing, and kicking the ball.

## ACTIVITY #6 - PLAYING WITH A WAGON

A. TASK DEFINITION: This is an especially important activity as it is the first time that our major concern is getting the children to play with each other, that is, to cooperate. The goal of the activity is to have them take turns pulling each other in a wagon, without fighting over "turns" at riding or pulling.

B. PRETEST: We take a baseline (pretest) here by simply giving a wagon to two children (we will call them "A" and "B") and watching what they do with it. Make sure that this is either outside or in a large room with plenty of space. For each child, record the following:

|  | Child A |  |  | Child B |  |  |
|---|---|---|---|---|---|---|
|  | Always | Sometimes | Never | Always | Sometimes | Never |
| Does he try to pull the wagon? |  |  |  |  |  |  |
| Does he get into the wagon? |  |  |  |  |  |  |
| Does he fight the other child to get into the wagon? |  |  |  |  |  |  |
| Does he fight the other child to pull the wagon? |  |  |  |  |  |  |
| If "A" is in the wagon, does "B" try to pull him? |  |  |  |  |  |  |
| If "B" is in the wagon, does "A" try to pull him? |  |  |  |  |  |  |

You can start by simply watching the children for a 15 minute period, writing down anything that is of importance, for example, if either of the children is physically unable to pull the wagon or get in by himself. If they do not use the wagon correctly, you can repeat the baseline period using the commands: "Get in the wagon. Pull the wagon." and see if you get any differences.

C. SUGGESTED EDUCATION PROGRAM: Begin by getting one of the children to sit in the wagon. It is best if he gets in by himself, but you may have to help him by gently guiding him over to the wagon and helping him get in. Then tell the other child to "Pull the wagon." If he doesn't go right over and try, gently guide him towards the front of the wagon, and reinforce him for approaching the handle, picking it up, and pulling on it. Remember that you should always wait for a better behavior to occur than the last one that he was paid for before you give him a reward. This goes for your approval as well as for candy reinforcers.

If he is unable to pull the wagon by himself, help him give the child sitting in it a ride, and continue to reinforce him every time he tries to pull harder or gets better. After the riding child has had a short ride (about two or three minutes maybe), ask him to "Get out." and tell the other child to "Get in the wagon." Then repeat the process as before.

Continue giving the children turns, because they must learn that it is only by pulling that they get a chance to ride (and only by riding that they get a chance to pull, if you have any mixed up kids).

You can repeat the pretest procedure at any time to measure the progress of the child. This would, of course, be the posttest for this activity.

## ACTIVITY #7 - TOILET TRAINING

A. TASK DEFINITION: The goal of toilet training is, of course, to have the child stop whatever he is doing and go to the bathroom whenever the urge hits him. When he is fully trained, the child will move quickly to the toilet, take down his pants and underclothes, turn, sit on the toilet, evacuate, wipe himself if necessary, stand up, pull up his underwear and pants, flush the toilet, wash his hands, and return to the playroom. Thus, you will have to teach the child a lot of things besides just going in the toilet. With boys you even have to teach them to aim so they hit the toilet and not the floor.

B. PRETEST: Again, before we start our training we want to know how well the child is trained. The best way to do this is to make up a record sheet, with spaces for each hour of the day (see attached sample). The child must be watched for all the time that he is awake to get an accurate measure of his present behavior. Because of this, we usually train more than one child at a time because it doesn't make sense to have one person watching just one child for long periods of time. While watching the children, marks should be made on the sheet every time that he goes to the bathroom. You should keep track of what time of the day it happened, where he went (hit or miss), and whether it was a bowel movement or urination. (We have included a sample form in the back of this booklet.) Because toileting is not very stable we must keep this record for at least two days. After we get this baseline we should test to see if he will go into the bathroom and sit down with the command "Go to the bathroom." If he does, we should also write down what else he can do, for example, does he undress himself on command, does he evacuate on command, does he wipe himself on command, does he dress himself on command, and so forth. If the child does all of these things on command, he should be reinforced for his good behavior.

C. SUGGESTED EDUCATION PROGRAM: In teaching the child to use the toilet correctly, we feel that it is best to begin with the "beginning" instead of the usual "end" behavior. That is, we would begin by teaching him to go into the bathroom on command, instead of teaching him to actually use the toilet right away. We would then give him reinforcers for walking into the bathroom and standing in front of the toilet. A command "Return to the playroom" should then be given. It is good to gently push him through these behaviors by hand if necessary, being sure to reinforce him if he does any of them by himself. This should be repeated several times in a row, until the child goes into the bathroom, stands in front of the toilet, and returns to the playroom on command. Such commands should be given clearly and in an even voice.

When the child moves to and from the bathroom on command, without you pushing him, the next step is to teach him to take off his pants and pull them back up. With a girl we would teach her to pull up her dress to the signal "Up with the dress." and to pull her pants down to the signal "Down with the pants." We must teach each of these separately, before they can be combined into a single act. With boys a double command must also be taught: "Down with the pants. Down with the shorts." Remember to reinforce the child for each completed act, or for any performance that is closer to the goal than the last performance for which he was reinforced.

Following this we must teach the reverse dressing behavior. For girls it would be "Up with the pants. Down with the dress." and for boys it would be "Up with the shorts. Up with the pants." Again reinforcers should be given for each step closer to the desired goal.

At this point we have a child who will go into the bathroom, stand in front of the toilet, undress himself enough to go to the bathroom, dress himself again, and return to the playroom--all when we give signals for him to do so.

The next step is to teach the child to sit on the toilet to the signal of "Sit down." As he sits down he should be given a reward. It is also good to teach him to sit quietly for longer and longer periods of time. Making him sit for longer and longer intervals of time should accomplish this. If he tries to get up he should be held firmly until he stops struggling. If he does not try to get up for a few seconds without being held he should be immediately rewarded. Thus, any attempt to get up produces restraint, while sitting quietly gives him things that he likes.

As a general rule the child should not be required to sit on the toilet for more than five or ten minutes. However, he should never be allowed to get up during these periods. Also, he should never be given the command "Get up" unless he is sitting quietly. After being told to get up, he should be reinforced for properly dressing himself.

Each child should go through this exercise five or six times each day at the times when it is most likely that he will go to the bathroom. (We should know these from our pretest.) The set of commands: "Go to the bathroom, take down the pants, take down the shorts, sit down, get up, up with the shorts, up with the pants, go to the playroom," should be given in sequence, and reinforcers should be given for correct performances.

For the most part, the rest of it is up to the child. We must wait him out until we catch him in the act of going to the bathroom in the toilet. When happens then? If you have ever given a reward, give it at this point! You will find that the second, third, and fourth times will be easier and easier and easier to catch.

Eventually we hope that he will learn to do all of these things when we give him the signal "Go to the bathroom." And finally, we hope that he won't even have to be told. Although these may take a fairly long time, they can be done if you use your reinforcers correctly and really try to train the child.

## ACTIVITY #8 - EATING CORRECTLY

A. TASK DEFINITION: Proper eating behavior demands that the child (1) enter the dining room, get his tray, and sit down quietly and quickly, (2) pick up his spoon (or fork) and eat his meal without spilling on the table, floor, or himself, (3) drink his milk without spilling, (4) cut his own food if a knife is provided for doing so, (5) pick up his tray and carry it to the kitchen without dropping it or spilling from it, and (6) leave the dining room quietly.

B PRETEST: Because so many different activities are all a part of correct eating, it is somewhat more difficult to pretest. One suggested way to handle the problem is to observe the child in the dining room for 2 or 3 meal periods. During this baseline period he should be left alone as much as possible, and given help only when he needs it. You should keep track of how well he eats--there is a sample form in the next section that tells you what to record.

After the 2 or 3 meal pretest periods one additional meal should be used to find out how many of the things he will do if given a command. Here you should take the child to the dining room yourself, and give him the command, "Sit down." He should then be instructed to "Use your spoon," which should be repeated every time he uses his fingers. When he has finished eating he should be told to "Stand up" and then to "Pick up your tray" and "Take it over there" (to the kitchen). Finally, he should be told to "Go to the hall." The same information should be taken down here as in the other pretest where he was freer to do what he wanted.

C. SUGGESTED EDUCATION PROGRAM: In teaching a single child to eat better you should begin with him seated at a table with you standing directly behind him. At least in the beginning, you should also have a helper seated across the table in front of him. Begin with the tray in front of the helper, away from the child, so that he can see the food but cannot reach it. Place the spoon on the side of the tray, so that the handle is easy to pick up. Have the helper slide the tray towards the child, and give the command "Take the spoon." If necessary, guide his hand to the spoon; then tell him to "Take a bite," again guiding his hand if necessary. You may have to begin by guiding his hand by holding your hand over his--you should rapidly decrease the amount that you help him by moving your hand away from his hand to his wrist, then to his arm, and finally just to his elbow. Never guide him more than is necessary--always try to let him do as much as he can by himself.

If the child drops his spoon and takes a bite with his fingers, make him drop it and rapidly pull his tray across the table. Count slowly to 10 before you push the tray towards him again, making sure that the spoon is in an easy place to pick up. If the child throws a tantrum or tries to get up, cross his arms in front of him across his body and hold him in his chair until he calms down. As soon as he begins to calm down release him and push his tray toward him again. Do not talk to him while you are holding him in this position, as this may pay him for throwing the tantrum. Never push his tray to him unless he is sitting quietly.

At intervals during the meal or when the child makes the appropriate movements offer his milk to him. If he picks it up correctly and drinks without spilling, just leave him alone. Guide his hand with yours as much as necessary. If he spills it or pours it out, or something like that, take it away from him and make him sit quietly while you count slowly to 10 again. Then let him have his milk or his tray again.

(2)

Some of the children always eat what they like best first. It may be helpful to have their dessert, or whatever they like best, on a separate dish. This way you can let them have a small bite of it only after they have correctly eaten some of their other food. If they don't eat correctly, do not let them have their dessert.

Whenever you pull the child's tray away for not eating correctly, be sure to say "NO" firmly. Whenever the child gets better in his eating manners, be sure to praise him with a "Good boy" or something like that, as well as letting him continue eating.

When the meal is over tell the child to "Pick up your tray." If he will not do this, guide his hands in picking it up. If he still resists, make him sit at the table for 10 seconds or so and try again, again guiding his hands if necessary. When he finally picks up his tray, tell him to "Take it over there." If he drops the tray while carrying it to the kitchen,make him go back to the table and sit before trying again.

## ACTIVITY #9 - PUTTING ON A PULLOVER SHIRT

A. TASK DEFINITION: Putting on a pullover shirt includes determining which side is the front, pulling it down over the head, putting one arm in the correct hole, putting the second arm through the other hole, and pulling the shirt down in front and back.

B. PRETEST: To pretest the child's ability to put on a pullover shirt we give him a pullover shirt and tell him to "Put on your shirt." You should let the child try this several times, keeping track of what he does. Pay attention to the kinds of errors that he makes because this will tell you what parts of the activity have to be worked on the most. A sample record sheet for this activity is contained in the back of this booklet.

C. SUGGESTED EDUCATION PROGRAM: This activity is just like puzzle-building in that we start from the "end" of the activity. To do this we begin by simply having the child pull the shirt down in front and back. When the child can do this correctly and easily, we remove one arm from its hole and teach the child to replace it, and then pull it down as before. Following this we remove both arms and have him follow the same order in putting first one arm and then the other through the holes, and then pull the shirt down. The next step is, of course, to teach him to put the shirt over his head when we give it to him. We always require that the child go through all of the activities that he has already learned on each try, and we never move to a new activity until all of the earlier ones are done easily and correctly. During the teaching period the following commands should be used: "Pull your shirt down." "Put your arm through." "Put your shirt on."

To give a posttest you can simply repeat the pretest procedure at any time.

## ACTIVITY #10 - PUTTING ON PANTS

A. TASK DEFINITION: Putting on pants includes holding them so that the front of the pants is in front of the child, putting one leg into the pants leg and pulling them up so that the foot comes through, doing this for the second leg, pulling them up over the hips, zipping or buttoning the pants, and fastening the belt if one is provided.

B. PRETEST: We take a baseline by giving the child a pair of pants and telling him to "Put on your pants." You should let the child try several times, keeping track of what he does. Pay attention to the kinds of errors that he makes because this will tell you what parts of the activity have to be worked on the most. There is a sample form in the back of this manual.

C. SUGGESTED EDUCATION PROGRAM: This activity is just like puzzle-building and putting on a shirt in that we start from the "end" of the activity. To do this we begin by putting on the child's pants and leaving them down around his knees (we will ignore, for the moment, buttoning and zipping them). Then we teach him to simply pull them up over his hips, giving reinforcers as necessary. Next we remove one leg from the pants, and teach him to stand on one leg and put the other one through the empty leg. Each time that he gets this leg on be sure to have him complete the activity by pulling them up over his hips. When he can do this well we remove both legs but give him the pants in the proper position; that is, with the front facing in the correct direction. Finally, when he is able to put on both legs correctly, we hand him the pants in the wrong position and show him how to get them in the correct position before trying to put them on.

Notice that on each try we always require that the child go through all of the activities that he has already learned, and we never move on to a new activity until he can do all of the earlier ones easily and quickly. During the teaching period the following commands should be used: "Pull up your pants. Put your leg in. Put your pants on."

Repeat the pretest procedure to give a posttest for this activity.

## ACTIVITY #11 - PUTTING ON SOCKS

A. TASK DEFINITION: Putting on socks is also a very difficult task for many children to learn. It requires that they learn to hold the sock correctly--that is, they must learn which side is "up" and that the heel-side is "down." They must also learn to hold the sock with the heel-side down and with their thumbs inside the sock. Next they must learn to fold the sock up into their hands, place it over their toes, and pull on the top so that it goes over their foot and up their ankle.

B. PRETEST: We pretest by giving the child a sock and telling him to "Put on your sock." You should let the child try several times, keeping track of what he does. Remember to watch for his errors, so that you will know what parts of the activity must be worked on the most. See the back of this manual for a sample record form.

C. SUGGESTED EDUCATION PROGRAM: In teaching the child to put on a sock we start from the "end" of the activity. That is, we begin by correctly folding the sock up, with our thumbs inside the sock, placing it over his foot, pulling the top up around the heel, and simply having him pull it up over his ankle to the command "Pull your sock up." It is best to do this while standing behind him, so that he sees exactly what it should look like if he were doing it himself. Then, when he can pull it up easily and quickly upon command, put the sock on but only pull it half-way on over his foot, having him pull it over his heel and ankle. Next we require him to pull it when we just pull it over his toes. The next step is to fold it up ourselves and then give it to him, making him take it with both thumbs inside as it would be if he had folded it up himself. Here he must put it over his toes and pull it all the way on by himself.

Next we must teach him to get it correctly in his hands, with his thumbs inside and with the heel down and the top up. Finally, we teach him to perform the rolling activity--to fold the sock up into his palms before putting it on over his toes.

Remember again that we always require that on each try the child go through all the activities that he has already learned, and we never move on a new activity until all of the earlier ones are done easily and correctly. During the teaching period the following commands should be used: "Pull your sock up. Put the heel down. Put your sock on. Pull your sock up."

Repeat the pretest procedure at frequent intervals to measure the child's progress in this activity.

## ACTIVITY #12 - BUTTONING BUTTONS

A. TASK DEFINITION: Buttoning buttons requires good coordination on the part of the child. The task requires that he pull the two pieces of cloth together, grasp the button between the thumb and forefinger of one hand and spread the buttonhole with the thumb of the other hand, insert one edge of the button into the buttonhole, and push the button through with his thumb while pulling through from the other side with the thumb and forefinger of his other hand. (Try this a few times yourself to see the steps that you to through in buttoning one of your buttons.)

B. PRETEST: Put a shirt on the child and button all but the middle button. Give the child the command "Button the button." and observe what he does. Does he try to button it? How far along does he get before he gives up? A sample form is in the back of this manual.

C. SUGGESTED EDUCATION PROGRAM: In this activity we start from the "beginning" instead of the "end". Begin by teaching him to grasp the button between the thumb and forefinger of his right hand, with his thumb under the outside edge of the button, and the edge of the other side of his shirt between the thumb and forefinger of his left hand, with his forefinger on the inside of the shirt and his thumb spreading the buttonhole open. Then show him how to push one side of the button through the buttonhole, at the same time moving the forefinger of this left hand around to grasp the button as it comes through. Next he must pull the button through with his left hand thumb and forefinger at the same time pull on the edge of the shirt next to the buttonhole with the thumb and forefinger of his right hand.

While teaching the child to button his shirt, use the command "Button your shirt." Be sure to reinforce him when he tries to do it. It is probably easiest if you stand behind him and guide his hands to help him at first. If one is available, it is probably best to start with a shirt or coat that has very large buttons.

The posttest is simply a repeat of the pretest procedure.

## ACTIVITY #13 - TYING SHOELACES

A. TASK DEFINITION: Tying shoelaces is one of the more difficult tasks for many children. The child must be able to use his hands and fingers very well before it will be possible for him to tie his own laces. It is good training for him though, and it is good to try to teach any child this kind of activity even though they are not very good with their hands.

As you might expect, the task consists in pulling the laces tight, tying the first half-knot, and then properly looping one of the laces over the thumb and pulling the other through to form the bow. A useful aid in teaching this activity is a shoe mounted on a board that has two different colored laces in it. This allows the child to practice without bending over, and lets him see more easily how the laces go together.

B. PRETEST: Pretesting for this activity is very easy. Simply put the child's shoe on and leave the laces loose, telling him to tie his shoes. Then see if he tries to tie it himself. If he does, make a note of it and also write down how well he does. If he doesn't even try, give him the command "Tie your shoe." and again watch what he does. You might repeat this about three times to make sure that you have a good baseline. A form is included in the back of this booklet.

C. SUGGESTED EDUCATION PROGRAM: For this activity, you can either use the child's shoe or the one on a board mentioned above. If you use the one on the board, be sure to place it in front of the child with the heel towards him, just as it would be if he had it on. This will make the training more like the actual activity that you want him to learn.

This is another activity that we start from the "beginning" rather than from the "end." That is, first put his shoe on him and leave the loops long enough so that he can easily get his fingers into them to pull them tight. Show him how to pull on the loops to tighten the laces, and then have him pull on them himself. Guide his hands gently if you have to. Be sure to reinforce him for any behavior that is in the right direction.

After he has learned to pull the laces tight, teach him to tie the first half-knot. Begin by showing him how to form an "X" with the laces, and then putting one of the ends under the "X", pulling it tight. Have him repeat this until he can do it easily by himself. It is not necessary to loosen the laces each time, but you should do this frequently enough to make sure that he gets the idea that first you pull the laces tight, and then you make an "X" and loop one end through and pull it tight.

Next show him how to form a loop with one of the ends. This is enough for this step, so make him practice it until he can do it easily and quickly. Then show him how to loop the other end around his thumb and push [illegible] through the loop to form the other half of the bow, and pull it tight. This is probably the hardest part, but if he has been successful in the first steps,he will probably learn this quite quickly.

Repeat the pretest to give a posttest for this activity.

## ACTIVITY #14 - BRUSHING TEETH

A. TASK DEFINITION: The goal of this activity is to have the child go into the bathroom, get his toothbrush, put toothpaste on it, turn the water on, brush his teeth thoroughly, rinse his mouth, replace his toothbrush, and dry himself off to the signal "Go brush your teeth." Although it is one of the easier activities to teach, because most children like to brush their teeth (especially if they like the taste of the toothpaste you give them), it is also one of the most important, as it makes them easier to be around and keeps their teeth healthier.

B. PRETEST: To take a pretest on this activity, simply tell the child to "Go brush your teeth." and note whether or not he goes into the bathroom. If he does not go by himself, take him into the bathroom and give him a toothbrush and some toothpaste and watch what he does with it. Write down exactly what he does. For example, does he try to put toothpaste on the brush? Does he try to brush? Does he dry himself when he is done? You should try this at least three times to get a good baseline. See the back of this manual for a suggested record form.

C. SUGGESTED EDUCATION PROGRAM: Because most children like to brush their teeth, we usually start the education program with the actual brushing. Put some toothpaste on a brush, and while standing behind the child, put the brush into his hand. Gently guide his hand as much as is necessary until he gets the brush into his mouth, and then guide his hand back and forth to brush his teeth. If he acts up or won't try himself, take the toothbrush away for about 10 seconds and then try again. If he does try to brush his teeth,be sure to praise him for doing a "good job." Remember to guide his hand only as much as is necessary, always trying to let him do it by himself. After all, if we had wanted you to brush his teeth for him, that's what we would have hired you for!

When he has finished brushing, have him put his brush away and then dry himself with a towel. As he leaves the bathroom, be sure to praise him for doing such a good job.

When he is able to brush his teeth by himself, the next step is to teach him to put the toothpaste on the brush. Again, you should stand behind the child and guide his hands as much as is necessary in taking off the cap, putting the toothpaste on the brush, and then replacing the cap. Be sure to praise him whenever he gets better. If he acts up or won't try, take the brush and toothpaste away from him for about 20 seconds before trying again. A firm "NO" as you do so would also be good.

You can take a posttest on this activity by simply repeating the baseline procedure.

## ACTIVITY #15 - WASHING

A. TASK DEFINITION: The goal of this activity is to have the child go into the bathroom, turn the water on in the sink, wash his hands with soap, rinse them off well, turn the water off, and dry himself with a towel to the command "Wash your hands!" It is best to teach him to just wash his hands first, and leave washing his face until later.

B. PRETEST: To take a baseline take the child into the bathroom, and put a bar of soap and a towel in a place where he can easily reach them. Give him the command "Wash your hands!" and watch what he does. Make sure that he understands what you want--you might have to turn the water on for him and point to the soap if he doesn't understand language very well. Keep track of what he does. Does he turn the water on by himself? Does he pick up the soap? Does he get himself wet? Does he rinse himself off after using the soap? Does he turn the water off when he is done? Does he dry himself when he is done? It is best to try this on two or three different occasions to make sure that you have a good baseline. You can use the sample record sheet in the back of this manual if you want to.

C. SUGGESTED EDUCATION PROGRAM: To teach the child to wash his hands begin with a sink full of water or with the water running. Have the child stand in front of the sink, and you stand directly behind him. Give the command "Wash your hands!" and then gently guide him through the motions of picking up the soap, rubbing it on his hands, rinsing his hands, turning the water off (or draining the sink), and drying his hands. Again, help the child only as much as you have to, and always reinforce him for doing a little bit more on his own. It might also be helpful if you showed him how by first washing your own hands while he watches.

You can give a posttest at any time by simply repeating the pretest.

## ACTIVITY #16 - IMITATION OF MOVEMENTS

A. TASK DEFINITION: In this activity the child imitates movements that you make with your hands and arms and body. You are a model, and we want to teach him to do what you do when given a signal to do so. The goal is to have the child immediately imitate your movements when you tell him to do so, even if he has never imitated these particular movements before.

We usually teach the child some very easy movements at first, and gradually make them harder and harder. An order of movements that we feel is useful is given below. Also given are the signals that you should use to tell the child to imitate:

1. "Do this. Give me your hands." Hands extended to front and you hold them briefly.
2. "Do this. Hands up." Hands extended over head.
3. "Do this. Hands out." Hands extended out horizontally.
4. "Do this. Hands on head." Hands folded on top of head.
5. "Do this. Touch your toes." Hands touch toes with child seated in chair.
6. "Do this. Touch your knee, stomach, chin, hair, ear, etc." Child touches whatever part of the body that you name.

B. PRETEST: To take the baseline in imitation, seat the child in a chair directly in front of yourself. You should then go through each of the movements in order, using the signals listed above as you do each movement. The baseline for this activity is the number of movements that the child imitates correctly. There is a sample form in the back of this book.

C. SUGGESTED EDUCATION PROGRAM: We usually begin by making sure that we can hold the child's attention. If he has already been taught to sit quietly, you probably won't have any trouble here. If he does not sit quietly, you might have to teach him to pay attention to what you are doing by giving him payments for looking at you when you say, "Look at me."

When you start teaching the child to imitate, you might find it easier if you have someone to help you. You and the child should be seated across from each other. Your helper should be sitting right behind the child. Starting with the first movement to be taught, you should give the command, "Do this. Give me your hands," in a clear, even voice, at the same time holding your hands out towards the child. If the child does not start to do the same thing, your helper should guide the child's hands out in front of his body. When the child's hands are fully extended have your helper reinforce him. Make sure that the reinforcer is given exactly when his hands reach you.

Continue repeating this sequence until the child imitates this first movement correctly. The helper should always help the child less and less, and reinforcers should be given only when the child actually gets better in his imitation.

This should be repeated for each of the movements listed above. You can test your effectiveness at any time by simply repeating the baseline procedure. In this case the helper wouldn't guide the child at all.

## ACTIVITY #17 - IMITATION OF MOUTH MOVEMENTS

A. TASK DEFINITION: This task should never be tried until the child is good at imitating your movements as described in Activity #16. Primarily, the purpose of this activity is to help the child learn the movements of his mouth that are necessary for speaking. The movements consist of (1) opening his mouth, (2) closing his mouth with his lips together, (3) putting his upper teeth on his lower lip, (4) putting his tongue on his upper teeth, (5) putting his tongue behind his upper teeth, and (6) putting his tongue behind his lower teeth. The following list shows which speech sounds are made with each placement. It is not necessary that the child make the sounds while learning how to correctly hold his lips, tongue, and teeth.

| Movement | Position of Mouth Parts | Sounds Made with this Movement |
|---|---|---|
| 1. | Mouth open | All vowels (a,e,i,o,u) and the consonant /h/. |
| 2. | Mouth closed and lips together | Consonants /m/ and starting position for /p/ and /b/. |
| 3. | Upper teeth on lower lip | Consonants /f/ and /v/. |
| 4. | Tongue on upper teeth | Consonants voiced /th/ (as in the) and the voiceless /th/ (as in thin). |
| 5. | Tongue behind upper teeth | Consonants /d/, /t/, and /n/. This placement is also associated with the consonants /s/ and /z/. |
| 6. | Tongue behind lower teeth | Although not necessary, this placement can be part of the consonants /k/, /g/, /sh/, and /ing/. |

You should try these positions yourself to make sure that you know what it is that you want the child to do.

B. PRETEST: The pretest should be made during a session in which the child is imitating movement such as hands on head, hands out, clapping, and so forth, as described in Activity #16. If the child is imitating these movements quickly and correctly, you should seat him in front of a large mirror. You should then sit right behind him, so that he can see both himself and you, and tell him, "Do this," as you make each mouth movement yourself. You do not have to follow any particular order when doing the pretest. That is, you can try the child on movement number 1, then skip to number 6, then to number 5, or however you wish to do it. You should score the child on a chart like the one shown in the back of this book.

By having the child try to imitate each movement several times we can find out what the child already can do, and from this find out what we have to teach him. If you score "No Response" on three movements in a row you should go back to having the child imitate the motor movement of Activity #16 before trying again.

C. SUGGESTED EDUCATION PROGRAM: You may have to gently move the child's mouth to shape it into the correct imitation of the mouth positions. When this happens, the child must be reinforced for holding the position for a second or two after you relax your hold on his mouth. Start with the "Mouth Open" imitation, giving the command, "Do this." If the child does not imitate you when you open your mouth, reach around his shoulder and place your index finger under his nose and your thumb on his chin and gently try to push his lips apart. When he does open his mouth, praise him and, if necessary, reinforce him with a food reward. This should be continued until the child opens his mouth quickly without any help from you.

When the child has learned to imitate you by opening his mouth, it becomes fairly easy to have him close it as he watches you do it in the mirror. If the child does not imitate this, you should again use your left hand to help the child move his mouth. As he imitates more and more quickly and more on his own you should help him less and less. As the training continues the child should be opening and closing his mouth without any help from you to the signal, "Do this," given as you make the mouth movement for him to see in the mirror.

When the child is good at imitating the mouth open and mouth closed responses, the next step is to teach him to stick his tongue out (yes, we really *want* him to learn to do this!!). You should start by giving the signal, "Do this," and stick your tongue out as far as you can (within the limits of comfort, of course). If the child doesn't stick his tongue out too, you can either hold a sucker in your left hand in front of his mouth, or you can reach into his mouth and pull his tongue out (a very dangerous procedure if the child likes to bite people), to get him to do it. In either case, the child should be reinforced as soon as he sticks his tongue out. It is usually best to get the child to imitate the movements by himself. If you have to pull his tongue out with your fingers he might think of this as punishment and would stick out his tongue only if he thought that this was the only way that he could keep from being hurt. We don't want to have the child scared of us--we would much rather that he enjoy learning the things that we teach him.

During each session of teaching mouth movements you should always start with the movements that he has already learned before going on to new movements.

The next step is to teach the child to move his tongue up and down in imitation of you when you move your tongue up and down. Then you should teach him to place his lower lip on his upper teeth, and finally to place his tongue behind his lower teeth.

Remember to always review all the movements that you have already taught to the child before going on to new movements. And remember also to have the child do as much as he can by himself, helping him only when he can't do it by himself. When the child is first learning to make a movement, you should reinforce him every time that he comes closer to making the correct movement. As he gets better and better, gradually reduce the number of reinforcers you give him, until he is making the movements in imitation of you without receiving any reinforcers at all.

When the child has learned all of the movements you can give him a posttest. To do this, simply repeat the pretest, giving him several trys at each movement.

## ACTIVITY #18 - IMITATION OF SOUNDS

A. TASK DEFINITION: This activity follows imitation of mouth movements and is the next step in getting the child to make the sounds necessary for speaking. The main goal is to increase the times that the child makes sounds, and to have him imitate some of these sounds when given a signal to do so.

B. PRETEST: The signal for imitating sounds is, "Say ______." You should use this signal every time that you want the child to imitate what you say.

There are two things to measure in the pretest. First, you should measure the number of sounds that the child makes per minute. To do this, simply count the number of sounds that he makes while you watch him for 10 minute periods. You do not have to keep track of the kind of sounds that he makes. You should do this at different times and places, so that you get a good measure of how often he makes sounds. For example, you might measure this when he is playing, when he is eating, or when he is coloring or putting a puzzle together. A sample recording chart is shown in the back of this book and below:

| Situation | | | Minutes | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Playing with Billy | ✓✓✓✓<br>✓✓✓✓ | ✓ | ✓✓ | ✓✓✓ | ✓✓ | ✓✓✓<br>✓✓✓<br>✓ | ✓ | ✓✓✓ | ✓ | ✓✓ |
| Coloring | ✓✓ | | ✓✓ | ✓ | | ✓✓ | | ✓ | ✓✓✓ | |
| Eating | ✓ | | ✓ | | | ✓✓ | | ✓✓✓<br>✓✓ | ✓ | |

The second thing to measure during the pretest is the number of sounds that he can imitate. In taking this baseline, have the child seated across from you and give him the signal, "Say _______ (the sound you want him to imitate)." You should give the child six tries on each sound, reinforce him after every three tries, whether he correctly imitates you or not. This is to make sure that the child will keep trying to imitate you, even though he may not be able to do it very well. The list on pages 121 and 122 gives you all of the sounds that you will use in the pretest, as well as a means for scoring each child on the sounds. You should practice the sounds well before trying them with a child to make sure that you know them all. When you say them for the child to imitate be sure to speak clearly and distinctly.

C. SUGGESTED EDUCATIONAL PROGRAM: The first thing that we want to teach children who don't talk, or who talk very little, is just to make more sounds. A lot of this can be done by simply paying attention to the child whenever he says something, whether or not you can understand what he said. We find that children are often ignored or, even worse, scolded for talking--this is most certainly a good way to make them stop talking.

The fastest way to get the child to talk more is to begin by sitting down with him and simply reinforcing him for any sound that he makes. This should rapidly increase the amount that he talks. As soon as he is making a lot of sounds, you must begin to select out "good" sounds and reinforce these, while ignoring sounds that are not very good. Generally speaking, the sounds that are on the sheet that you used in the pretest are all "good" sounds, while yelling, mumbling, and so forth are "poor" sounds that should be ignored. When you have gotten the child to say a "good" sound often, you should give the signal "Say" followed by that sound. For example, if the child has been saying "ba", you should give him the signal "Say ba!" You should give him this signal about every 15 seconds to begin with. If the child imitates you in less than 5 seconds,give him a reward. Continue doing this as the child imitates both better and faster. You should always require that the child imitate you faster before reinforcing him. The goal is to have the child say "ba" almost immediately after you give the signal, "Say ba." The point is that better and faster imitation of sounds should lead to more reinforcers, while not getting better should lead to no reinforcers.

When the child is rapidly imitating the first sound upon command, you should repeat the procedure, getting the second sound. To do this, simply sit down with the child and wait for him to say another "good" sound, immediately rewarding him when it occurs. Then gradually bring this sound to a better level, again using the command "Say" followed by the sound. When the child is imitating this second sound, you should go back and review the first one. After this one is reviewed quickly, review the second sound, and then you can start on a third one.

You will be given help in deciding which sounds to work with. The sounds that are most important for the child to learn are the ones that you used in the pretest. These will be taught to the child in the next activity, however, so you don't have to worry about them too much here. The goal of this activity is simply to teach the child that the word "Say" is a signal for him to imitate you, and to immediately make sounds when you do.

After the child is imitating a number of sounds (probably about 8 or 10), you should give the posttest for this activity. This is simply repeating the pretest to see if the amount that he talks and his ability to imitate has increased.

## ACTIVITY #19 - IMITATION OF WORDS

A. **TASK DEFINITION:** When the child has learned to imitate mouth movements and some simple sounds, he is ready to learn to say the names of common objects and people. The next activity, #20, will teach him a lot of new words, so in this exercise we will just teach him 20 fairly easy ones. These are:

1. Bye-bye
2. Hi
3. Yes
4. No
5. The
6. Is
7. Are
8. Our
9. Mine
10. Me
11. You
12. I
13. He
14. She
15. Want
16. Good
17. Fine
18. His or her name
19. Am
20. Your first or last name, whichever is easiest

B. PRETEST: The pretest for word imitation is simply giving the child the signal "Say" followed by the words listed above. Give the child five tries on each of the words, and mark those that he can say well. See the back of this book for a sample record form. Remember, it is quite important that the child say the word several times in a fairly clear manner before you give him credit for it. You can use any of the words in Activity #20 that you want to in addition to the words listed above, if you think the child can do more than these 20 easy words. Be sure to keep track of which words you have tried, and which ones he already knows or can imitate.

C. SUGGESTED EDUCATION PROGRAM: We usually begin teaching the child to say words by starting with small, easy sounds and gradually work up to longer, more difficult sounds. Most of the words listed above can be broken down into two or more separate sounds. In fact, most of the sounds used in speaking are listed in the pretest for Activity #18. You may have to break down each word into separate sounds and teach the child these sounds before trying the whole word. For example, the word "me" can be broken down into /m/ and /ee/. You might find it necessary to have the child first learn to imitate you when you say /m/ and /ee/ separately, and then have him imitate /mee/.

You can make this more gradual by having him imitate /m/ and /ee/ with a pause between them, before having him put the two sounds together to make the word. Then the sequence would be:

1. Teach him /m/.
2. Teach him /ee/.
3. Teach him /m/ /ee/.
4. Teach him /mee/.

As before, you should always reinforce the child when he gets better. While working with the child, sit quite close to him so that he can easily see the way that you hold your mouth. You must also speak the sounds that you want him to imitate clearly and distinctly. Begin with some of the easier words, such as "No" and "Hi" and gradually work up to the harder words.

The speech therapist is a good person to talk to if you have trouble deciding which words you should work on next, or if the child has a lot of trouble with any of the words.

You can give a posttest after you have taught the child the words by repeating the pretest, using the same words that you used for the pretest.

## ACTIVITY #20 - UNDERSTANDING WORDS

A. TASK DEFINITION: The purpose of this activity is to teach the child to name objects that are fairly commonly seen and used. This means that he should, when the training is done, be able to say "pants" every time that he is shown a pair of pants, whether the pants are brown, black, blue, or red, or whether they are large or small. He should be able to name all of the other objects or people that we will teach him in this activity, without becoming confused by different sizes or colors, and so forth.

B. PRETEST: The pretest consists of asking the child to name several common objects. You should use real objects, pictures of objects, or toys that look like the real object, and have at least two examples of each one.

Simply ask the child the name of each one as you show it to him, and mark down the ones that he names correctly. The objects that we use in this activity are:

| Vehicle | Food | Clothing | People | Animal | Utensils |
|---|---|---|---|---|---|
| car | bread | shirt | man | dog | plate |
| truck | milk | socks | woman | cat | bowl |
| bus | meat | shoes | boy | cow | cup |
| bicycle | orange | pants | girl | sheep | spoon |
| motorcycle | apple | dress | baby | elephant | fork |
| scooter | banana | coat | policeman | horse | knife |
| wagon | beans | hat | nurse | lion | pan |
| ambulance | potatoes | underwear | doctor | pig | tray |

After you have asked the child to name each of the objects, repeat the procedure by having the child point to the objects as you say their names. This way we can see how advanced he is--first by asking him to name them, and then finding out whether or not he knows what they are.

There is a sample form for these pretests in the back of this booklet.

C. SUGGESTED EDUCATION PROGRAM: This program is only for children who cannot point to the objects when you say their names. If the child can point them out when you name them, move him on to the next activity.

Begin this activity by putting two objects in front of the child that he does not know, such as a truck and a cow. Give him the signal "Give me the cow" and wait for him to hand you one of the objects. If he doesn't hand you one of them, take his hand and guide him in picking up the toy cow. By guiding him gently, teach him to pick it up and hand it to you. You should always use the same object, such as the cow, until the child understands that you want him to hand it to you. After a while the child should be picking up the cow and handing it to you whenever you give him the signal, "Give me the cow." Also remember to reinforce him every time that he gets better in picking it up and giving it to you.

When the child is quickly picking up the cow and handing it to you, you should ask him to give you the other object, the truck. You may have to again gently guide him with your hands until he understands that you want him to hand the truck to you now and not the cow.

When the child is quickly handing you the truck to your signal, "Give me the truck," you should again shift back to the cow, and work with this until he is again handing it to you when you give him a signal to do so. Then you should shift back to the truck, and then back to the cow, and so forth until the child will always hand you the correct object when you ask him for it. You must also remember to never take the object if he hands you the wrong one, and say "No" at the same time. This training should continue until the child always takes the toy that you name even when you switch back and forth all the time.

The next step is to use two toys that are very different from the first two, such as a shirt and a banana. (These should be two objects that the child doesn't already know.) Start with one object again and keep using it until the child hands it to you every time you ask him for it. Then shift to the other object, then back to the first, and so forth, until the child always hands you the correct object when you ask for it.

At this point you have a child responding to four names (truck, cow, shirt, and banana). Now place all four objects on the table in front of him and have him hand you one object at a time. It is best if you keep a record of how well he does here, to find out if he is learning anything. A record might look like this:

| Object Asked For | Right | Wrong | Object Asked For | Right | Wrong |
|---|---|---|---|---|---|
| 1. Shirt | x | | 13. Cow | x | |
| 2. Cow | x | | 14. Truck | | x |
| 3. Truck | | x | 15. Shirt | x | |
| 4. Shirt | x | | 16. Banana | x | |
| 5. Banana | x | | 17. Cow | x | |
| 6. Truck | | x | 18. Shirt | x | |
| 7. Cow | x | | 19. Truck | x | |
| 8. Banana | x | | 20. Cow | x | |
| 9. Shirt | x | | 21. Banana | x | |
| 10. Cow | x | | 22. Shirt | x | |
| 11. Truck | x | | 23. Truck | x | |
| 12. Banana | | x | 24. Banana | x | |

We can see by this record that the child was having a little trouble with the word "truck" at first, but that he knew the others so well that he was able to correct himself without additional training. If he had continued to miss "truck" we probably would have given him some more training with the truck by itself before putting it back with the other three objects.

When the child has learned the first four objects well enough to choose them whenever you ask him to, you should repeat the procedure with four different objects that he doesn't know. As before, you should begin with two, then move to the other two, and then let him try to pick out the ones that you want when all four are together. While working with the child in this activity you should always keep a record of his progress, so that you can see how well he is learning. He should always learn each new pair faster than the pair he just learned--that is, he should get better and better at picking out the objects that you give him because he is "learning how to learn."

When you have taught him the second set of objects you should put them all together on the table for the test. That is, he would now have eight objects to choose from, and you would tell him which ones to pick. This way he is always able to review what he has been learning, which should help him to remember longer.

The training should be continued for all of the objects used in the pretest, in the manner we have just described. There are, however, several points that you have to think about to make this as effective as possible. First, as we said earlier, you should use more than one example of each object. That is, you should have at least two different bananas, two different trucks, and so forth. These different examples of the same object should be different in color and size, so that the child can learn that the name of the object applies to all of that kind of object, whether or not they are the same in color, size, and so forth. That is, he should pick out a pair of pants whether they are large or small, black or brown, and so forth. Second, you should select objects at first that have names that don't sound alike. For example, you wouldn't want to start with a shirt and shoe because the words sound so alike that the child might be confused. After you have taught him several objects this won't be much of a problem. You should also select the pairs that you use from different categories, such as using a vehicle and a piece of clothing instead of using two pieces of clothing. The following pairs are suggested for any child who cannot point to the objects in the list when you start training:

1. Cow-Truck
2. Shirt-Banana
3. Bread-Man
4. Sheep-Pan
5. Apple-Baby
6. Bus-Socks
7. Plate-Boy
8. Horse-Milk
9. Pants-Car
10. Woman-Tray
11. Lion-Dress
12. Beans-Wagon
13. Policeman-Dog
14. Bowl-Shoes
15. Bicycle-Cup
16. Meat-Nurse
17. Spoon-Coat
18. Scooter-Fork
19. Ambulance-Hat
20. Orange-Girl
21. Underwear-Pig
22. Doctor-Elephant
23. Motorcycle-Knife
24. Cat-Potatoes

You can take a posttest on this activity by simply repeating the pretest procedure.

## ACTIVITY #21 - UNDERSTANDING THE NAMES OF COLORS

A. TASK DEFINITION: The goal of this activity is much the same as that of Activity #20, as the child will again be pointing to objects. However, as a result of this training the child will be responding to the colors of the objects, instead of to what the objects are.

B. PRETEST: As in Activity #20, the pretest here consists in having the child first try to name the colors of objects, and then point to colors that you tell him to find. A set of wooden blocks of various colors can be used to take the baseline. Seat the child at a table and place the blocks in front of the child. Then pick up one block at a time and ask the child, "What color is this?" Keep track of how many colors he names correctly. It is good to praise him periodically, whether he is right or wrong, to keep him interested in the task.

If the child can't name the colors, of if he makes a lot of errors, repeat the procedure asking him to "Hand me the (red, blue, yellow, and so on) one," until you have gone through all of the colors again. Again, the number of blocks that he correctly chooses is his baseline for this activity. Usually we use the following colors to take the baseline:

1. White
2. Black
3. Brown
4. Red
5. Orange
6. Yellow
7. Green
8. Blue
9. Gray
10. Purple

There is a pretest form in the back of this manual.

C. SUGGESTED EDUCATION PROGRAM: The educational procedure here is much like that of Activity #20. You should have at least three objects of each color available, such as a red shirt, a red block, and a red fire engine. As before, this training procedure is only for those children who could not answer correctly when you asked for the blocks, naming the color as you did so (the second part of the pretest). You will have to use different objects of the same color during the training, so that the child learns that color, and not what the object is, is the important thing to learn.

Begin by selecting two colors that have very different names, such as Red and White, instead of two with similar names, such as Black and Brown. You can use pictures, toys, blocks, or colored cards - but make sure that both members of the pair are exactly the same except for being a different color. For example, you could start off with a red truck and a white truck - the trucks here should be exactly the same except for their different colors. Or you could use blocks that are exactly the same, except that one is red and the other white. There is a sample form in the back of this manual that will help you keep track of the training.

Place both of the objects that you have selected in front of the child, and tell him "Give me the red one." If he picks it up and hands it to you be sure to reinforce him immediately. If he chooses the wrong one, simply tell him "No" and have him try again. If the child has already been through Activity #20 it will probably be unnecessary to guide his hand or help him in any other way.

When the child chooses the correct color on 5 tries in a row, switch and tell him "Given me the white one." Continue asking for the white one until he is correct 5 times in a row. (Notice that you have too keep track of what two colors you give him to choose from and which one he chooses throughout this procedure.) If the child starts to hand you the white one before you ask for it refuse to take it, and be sure not to count this as a correct try!

When the child has given you both colors correctly 5 times in a row for each color, begin to "mix it up," asking for the red one, then the white one, and the the red one again in a mixed up order. Again, keep track of which one you asked for and whether or not he was right in the one that he chose.

Remember that the child should not get a red-white-red-white-red-white and so forth sequence after getting 5 in a row correct on the white. Instead he should get what we call a "random" order - this is what you would get if you flipped a coin to determine whether red or white would be presented on the next try. In fact, flipping a coin is a good way to determine a random order. We did, and we got something like this:

1. Heads
2. Tails
3. Tails
4. Heads
5. Tails
6. Heads
7. Heads
8. Heads
9. Tails
10. Tails

If we then decided to have a heads mean "red" and a tails mean "white," we would give the colors in the following order:

1. Red
2. White
3. White
4. Red
5. White
6. Red
7. Red
8. Red
9. White
10. White

When you run out of colors, simply start over with the first one again, and continue until the child gets 5 in a row correct when they are presented in the random order.

If you go to the random order and the child does not seem to be able to get them correct, you will have to go back to the first procedure of using only one color at a time before trying the random presentation again. A good rule of thumb is to go back and start over with a single color if the child makes three errors before getting 5 in a row correct.

When the child is able to get 5 in a row right when the colors are presented in a random order, you can select a second pair of colors that he does not know and start over, just as you did with red and white. When he has learned this second pair, as shown by getting 5 correct when they are presented in random order, you can put all four of them together and again ask for them one by one. This will not only tell you how well he can tell these four colors apart, but will give him a chance to review the colors so that he will be able to remember them better.

Next teach the child four more colors, and then put all eight together. Continue this way until the child knows all ten colors. You must remember to keep mixing up the objects, for example, using a red truck on one try and a red apple on another, so that he learns the color and not the object itself. It is also best if the colors are not exactly the same. For example, the red truck could be a very bright red and the red apple a very dark red. This way the child will learn that colors can have different shades and still be the same color.

## ACTIVITY #22 - NAMING OBJECTS, ACTIONS, AND COLORS

A. TASK DEFINITION: There are three stages that children go though in learning to use words. First, they learn to say the same word that someone else says first. This is called "word-imitation." Second, they learn to point to or pick up an object that some else names. This is called "word understanding." Third, they learn to name an object that someone else points to. This is called "word naming," and it is the highest level of these three levels of using words. When you are done teaching this activity to the child; he should be able to name a large number of objects that are placed before him, and to name their color when asked to do so.

B. PRETEST: The pretest for this activity is the same as the pretests for Activities #20 and #21. The record that you have of how many objects the child was able to name in Activity #20 is a pretest of his ability to name colors. If the child has already been through these two activities it is unnecessary to give him a pretest - his posttest on these will be a good measure of what he can do before you start this activity. If he has not been through Activities #20 and #21, you should go back and do these first.

C. SUGGESTED EDUCATION PROGRAM: It is obvious that the child must be able to imitate the words that you want to use before he will be able to learn them. If he can't say the words, it is impossible to teach him to name objects. In fact, he must be able to say them quite clearly - you will have to be able to understand him before you will be able to know if he is learning anything. Then, too, if you are the only one that can understand him, there isn't much point in teaching him to talk!

If you aren't sure that the child can clearly say all of the words that you will be using in this activity (they are the same words that you used in Activity #20), you can give him a short test. To do this simply give him the command "Say _____" followed by the word that you want him to imitate. Have him imitate all of the words on your list, keeping track of the ones that he gets wrong. If he isn't imitating some of the words clearly you will have to go back to Activity #19 and teach them to him before starting this activity.

The training we use in this activity is much like that we used in Activities #20 and #21. Here we start with two objects again (you can use the same objects that you used in Activity #20 if you want to). The child has already learned to hand you the objects when you name them, so he already knows the differences between the objects. Now you simply hold one of the objects in your hand and say "What is this?"

Say "COW!" If the child imitates the word cow you say "Good" and, if necessary, give him a piece of candy or some other reinforcer. If he imitates the whole sentence, that is, if he repeats "What is this. Say cow!" after you, or he says something other than "Cow," you should firmly say "No! Say COW!" When the child is able to imitate you when you say the word "Cow," you are ready to move on to the next step.

The next step is to move the child from imitating what you say to saying the word "Cow" all by himself. The way that we do this is to give [illegible] as many hints as he needs to make the sound by himself. For example, you might begin by saying "What is this? Say ____ (pause for two or three seconds) ... COW!" If the child does say "Cow" during the pause, be sure to reinforce him for doing a "good job." If he doesn't say "Cow" until after you have said it, you will have to give him a bigger hint to help him.

A second hint that you can use is to hold the cow behind your back while you say "What is this? Say COW!" and, just as you say "COW," bring the cow from behind your back and hold it where he can see it. This action on your part should become a signal for the child to say "Cow" when he sees it. Repeat this movement if the child learns to say "Cow" when you take it from behind your back, but this time you should pause between the "Say" and the "COW!" In other words, this time you would say: "What is this? Say...(pause two or three seconds)...COW!" before you say it. That is, this should get the child to stop imitating and start naming.

If, however, you still can't get the child to say the word before you do, you will have to find an even better hint to help him. One way to do this is for you to say part of the word and teach the child to fill in the rest. For example, you know that the word "Cow" begins with the sound /k/. So when you start the command you say "What is this? Say.../k/.../k/.../k/.../ow/. If he does fill in the word be sure to reward him. Then try it like this: "Say.../k/.../ow/." And finally: "Say /kow/." What we are doing here is trying to get the child to say the whole word, when we only give him the first part as a hint. If he does fill it in, he should always be reinforced, and if he doesn't he should always get a bigger hint to help him.

Continue this procedure until the child immediately says "Cow" when you say "What is this? Say..." If the child starts to say the word before you do, the next step is to stop using the word "Say" and simply ask him "What is this?" while holding up the cow. When this happens you are ready to go on to a new object.

You should notice that in teaching the child to name objects that we show him, we always make him do as much as he can. That is, we begin by asking him to say the whole word without help, and give him hints only if he is unable to do it correctly. This is important to remember, as we will not be teaching the child anything if we work below the level at which he is currently able to perform.

Proceed in the same way with the second object. For example, if you were using a truck for the second object you would start by saying "What is this? Say TRUCK!" When he is able to imitate the words "Say truck" easily and quickly, you should start to pause between the words "Say" and "Truck" to allow the child to say "Truck" by himself if he can. If he still cannot say the word, give him a part of it: "What is this? Say.../tr/.../tru/.../truck/," giving him only as much of a clue as is needed to make the correct sound. Remember to give him less and less help each time, but enough to make sure that he can give the correct sound and receive a reward for it. This is a very difficult thing to learn to do -- you must learn to watch the child very closely and let him tell you what to do by what he does. If it looks like he is trying but just can't get it right, you should immediately give him more hints to help him out. And if it looks like the task is too easy, and doesn't hold his attention, you can move faster to give him more of a challenge.

When the child is able to say both words when you hold up the two objects and say "What is this?" you are ready to go on to the next step. Here you will present both objects one-at-a-time in a random order to make sure that he is naming them. If he makes a lot of mistakes, for example, three in a row, you will probably have to give him some additional training. When he is able to correctly name the objects when you present them in a random order he is ready to learn a new pair. Generally, it is good to give him more training if he makes more than three errors before getting ten in a row correct.

When you go to a new set of objects, simply repeat the procedure that you used with the first pair. When both of these are learned, that is, when the child can correctly name them when they are presented in a random order, you should give the child a test by using all four objects. Again, present these in a random order, and keep track of which one you held up for him to name and also what he called it. This will give you an idea of the kinds of errors he is making, and therefore what you will have to work on. When he is able to name all four, you are ready to go on to the next pair.

To sum up, we now have a child that knows the names of four objects, and we are now teaching him a fifth and sixth. When he has learned these two, put them in with the four and give him another test, presenting them randomly again. This will let him review what he has already learned. Keep teaching the child sets of two, until you get eight, and then test him on these. Continue until you have taught him all of the objects.

It is also important to have the child name some objects when he is not actually in training. For example, when he is eating, playing, or looking at pictures you could go up to him and point to something that he is using or looking at (like a fork, tray, meat, boy, girl, picture, and so forth) and say "What is this?" If he gives you the correct answer, praise him and let him continue his activity. If he doesn't answer in this situation you should give him a hint, such as "Say fork" or "Say meat," and then reinforce him if he imitates you. Then repeat the "What is this?" signal and continue giving hints until he correctly says the word without help. If you keep doing this we are sure that the child will soon use the words in more and more situations.

Having the child learn to name colors is done in about the same way, except that you ask him "What color is this?" instead of "What is this?" To start the training select two colors that are quite different but that he can name in imitation of you when you say their names first. Then show him a block that is colored one of these two colors, for example, blue, and say "What color is this? Say BLUE!" Use hints until the child is able to say the color name quickly and correctly. After that you should reduce the number of hints you give until he learns to say the correct color with you asking him only "What color is this?" When this happens, you can start with the other color, and when he has learned this one, present both of them in a random order. When he is able to pass this test without making more than 3 errors before he gets 5 in a row correct start him on two new colors, after which you should give him a test with all four presented in a random order. Then teach numbers five and six and add these to the four that he already knows. Continue this until the child is able to name each of the ten colors when they are presented to him in a random order. Remember to use different shades of the colors, so that he learns that each color can be somewhat different and still have the same name.

This might sound funny, but the child can learn to name actions, such as walking, running, sitting, eating, throwing, and so forth, in the same way. Here we can use pictures of these actions or use our own movements. We can start by using the actions in the following list:

1. Walking
2. Running
3. Sitting
4. Standing
5. Eating
6. Drinking
7. Hitting
8. Kicking
9. Writing
10. Climbing
11. Sleeping
12. Flying
13. Swinging
14. Sliding
15. Throwing

We would start as usual by showing him a pair of activities, such as walking and sitting. We can either use pictures of people doing these things, or use ourselves or a helper as a model. If we use pictures (and this is the easiest way) we would ask "What is the man (or boy or girl, etc.) doing? Say,"SITTING!" If you are using yourself as a model you should sit in a chair and ask the child "What am I doing?" Say, "SITTING!"

Continue the training as before, until the child quickly says " "Sitting" when you only say "What am I doing?" or "What is the man doing?" When he can do this correctly, shift to walking and repeat the entire routine again. When he has learned both actions you can give them to him in a random order to test him. If he passes (no more than three wrong before he gets 5 in a row correct) you can start on two more actions such as kicking and eating. Remember to have him review all of the previously learned actions whenever he learns another two. Continue with the training and review until he is able to name the action when you simply say "What am I doing?" or "What is the man doing?" It is also good to review these actions when you are outside with the child in a more natural location.

You can give posttests for each of these three areas by repeating the pretest procedure.

## ACTIVITY #23 - TALKING IN SENTENCES

A. TASK DEFINITION: The last seven activities have been aimed at teaching the child the parts of speech, such as mouth movements, sounds, object names, and so on, that we now have to put together into actual language. By this time the child should be able to name objects, colors, and actions, and to use these names meaningfully. The next step is to put these together into sentences, and to teach the child to use the sentences in a lot of different ways. He has to learn to talk about himself -- for example, what he wants to do, what he wants to eat, and what he wants other people to do. If he learns sentences he will be able to do these things, as well as tell himself what to do. The goal of this activity is to teach him how to speak in sentences.

B. PRETEST: To some extent, if the child has been speaking in sentences we would not have given him any of these activities. Therefore, we can pretty well assume that the children who get sentence training have never been heard to speak in sentences, that is, that they are at the zero level in this skill.

C. SUGGESTED EDUCATION PROGRAM: The most simple sentence looks something like this: "The ______ is ______." Now if we show a child a red ball, he should be able to tell us what it is (We would ask him "What is this?") and he should be able to tell us what color it is (we would ask him "What color is it?"). What we want him to say now is "The ball is red." So we would start by saying to him "Say THE BALL IS RED!" followed by "What color is the ball?" In other words, we first tell him the answer and then ask him the question, when we start this activity. As before, we would start with simply having him imitate what we say, leaving out as much as we can while making sure that the child can give the answer. When he is able to give the answer "The ball is red" when we ask him "What color is the ball?", we can give him a ball of a different color and continue the training. From here it should be fairly easy to go to a lot of other sentences that all have the same "The ______ is ______." form:

1. The house is warm.
2. The toast is good.
3. The boy is tall.
4. The hill is steep.
5. The car is fast.
6. The nurse is mad.
7. The cookie is little.
8. The stove is hot.
9. The dirt is bad.
10. The dog is big.

You can see from the above examples that a lot of different sentences can be used in the same "The ______ is ______." form. You can also see that the child must learn a lot of other words, such as big and little, hot and cold, good and bad, mad and happy, and so forth, which have not been taught to him before. However, you can teach these new words to him in the same way that you taught him names and colors in the earlier activities.

Another sentence form that is important for the child to learn is "I want some ________." This can be used for telling you that he wants water, food, and so forth. While we might begin by giving him some milk, for example, when he simply says "Milk"; later on we would require that he say "I want some milk." before giving him any. There are a great many ways that a child can use sentences of this type.

Another sentence form that is much like the "I want some ______." sentence is that "I want to _______," which is followed by some activity, such as "go outside and play" or "go to the bathroom" or "eat" and so forth. Again, you can teach sentences of this type if you correctly use imitation as we have described above.

There are a lot of different sentence forms that the child must learn to speak correctly. Some of these are listed below, with examples of how they can be used. You should think about ways in which each of these forms can be used.

1. The _____ _____ the _____. The boy hit the ball.
The man kissed the woman.
The boy drove the car.

2. The _____ was _____ by the _____. The boy was hit by the car.
The glass was broken by the boy.
The food was given by the nurse.

3. I don't want ________. I don't want milk.
I don't want the book.

4. I don't want to __________. I don't want to play.
I don't want to eat.

5. ______ me a ______. Tell me a story.
Sing me a song.
Give me a book.

There is a sample record sheet in the back of this manual that can be used to keep track of the child's progress in using sentences.

# APPENDIX A

## MATERIALS NEEDED FOR THE ACTIVITIES

The following is a list of the materials that are required to complete all of the activities. You should, however, feel free to substitute other materials in their place, as dictated by your needs. Some of the items listed are not required, such as the stopwatch, but are very useful if they are available.

1. Tables and chairs, children's size.
2. At least 10 puzzles, wooden or plastic, with fairly large pieces and of varying difficulty.
3. Coloring books.
4. Crayons, preferably some large ones and some small ones.
5. Set of 10 pictures for coloring, which are of varying difficulty.
6. Stopwatch.
7. Standard set of toys consisting of a truck, a doll, a set of blocks, and a wind-up toy.
8. Balls, large and small.
9. Wagon, large enough for the children to ride in.
10. Clothing, such as pullover shirts, socks and shoelaces.
11. Shirt or coat with extra large (at least one inch in diameter) buttons.
12. Shoe, mounted on a board, with laces of different colors.
13. Toothbrushes, marked with children's names.
14. Large mirror.
15. Standard set of colored blocks, approximately 2 inches in diameter, one each being white, black, brown, red, orange, purple, green, blue, yellow, and gray.

16. Standard set of objects, consisting of 3 examples of each of the 10 colors -- for example, a red shirt, a red truck, and a red apple. These can either be the "real thing," or they can be pictures.

17. Standard set of objects, consisting of 2 examples of each of the following:

car
truck
bus
bicycle
motorcycle
scooter
wagon
ambulance
bread
milk
meat
orange
apple
banana
beans
potatoes
underwear
shirt
socks
pants
dress
coat
hat
shoes
policeman
man
woman
boy
girl
baby
nurse
doctor
horse
dog
cat
cow
sheep
elephant
lion
pig
plate
bowl
cup
spoon
fork
knife
pan
tray

The above objects can be either the "real thing," pictures, or toy replicas of the objects.

18. A standard set of pictures representing the following activities, with at least two examples of each activity:

walking
running
sitting
standing
eating
drinking
hitting
kicking
writing
climbing
sleeping
flying
swinging
sliding
throwing

# APPENDIX B

## SUGGESTED REINFORCERS FOR RETARDED CHILDREN[1]

The definition of a positive reinforcer is that it is something that happens to the child that he likes. When it is given to the child for a good behavior, that behavior is more likely to be repeated in the future.

Reinforcers can be broken down into six types, some of which are easier to use than others, and some of which are better to use than others. These types of reinforcers, together with some examples of each, are shown below:

I. Edible Reinforcers: Food, Candy, and Drinks
    A. Sweets
        1. Cookies
        2. Candy, such as M&M's, jelly beans, gumdrops, etc.
        3. Jello
        4. Ice Cream
        5. Cup Cakes
        6. Marshmallows
    B. Drinks
        1. Coca Cola and other soft drinks
        2. Kool Aid
        3. Orange juice and other juices
    C. Snacks
        1. Fritos
        2. Pretzels
        3. Sugared cereals, such as Frosty Flakes
        4. Potato chips
        5. Graham crackers
        6. Cheetos
        7. Popcorn and caramel corn
        8. Cracker Jacks
        9. Peanuts
        10. Raisins
    D. Foods
        1. Regular meals
        2. Milk
        3. Desserts
        4. Fruits, such as apples, oranges, grapes, cherries, etc.

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[1] Some items in this list were taken from: Orlando, Robert; Schoelkopf, Ann M., and Tobias, Lester. Tokens as reinforcers-classroom applications by teachers of the retarded. George Peabody College: IMRID Papers & Reports, Vol. IV, No. 14.

II. Manipulatable Reinforcers: Toys, Games, Activities, Clothing, etc.

A. Toys
  1. Toy cars and trucks
  2. Toys such as stack rings, telephones, etc.
  3. Dolls
  4. Balls
  5. Wind-up toys
  6. Badges
  7. Balloons
  8. Soap bubble wand with soap
  9. Tops
  10. Water gun
  11. Whistle
  12. Jump rope
  13. Sand pail and shovel

B. Games and Activities
  1. Puzzles
  2. Blocks
  3. Harmonica
  4. Coloring books and crayons
  5. Painting kit
  6. Reading books
  7. Comic books
  8. Building materials, such as Lincoln Logs, Tinker Toys, etc.
  9. Modeling clay
  10. Chalk
  11. Colored paper
  12. Marking pen
  13. Tablet
  14. Pen
  15. Pencil
  16. Safety Scissors

C. Grooming Aids
  1. Brush
  2. Nail Clippers
  3. Hair Clips
  4. Comb
  5. Deodorant
  6. Mouthwash
  7. Soap
  8. Shampoo
  9. Toothpaste
  10. Toothbrush
  11. Compact
  12. Hair dressing
  13. Perfume

D. Clothing and Things to Wear
  1. Belt
  2. Gloves
  3. Shoelaces
  4. Ring

5. Handkerchief
6. Socks
7. Slippers
8. Handbag
9. Bracelet
10. Hair bow
11. Ribbon
12. Barrette
13. Necklace
14. Baseball cap
15. T-Shirt with decals
16. Sweatshirts

III. Social Reinforcers: Praise and Physical Contact
- A. Social Praise Reinforcers
  - 1. "Good girl (boy)"
  - 2. "Good work"
  - 3. "Good job"
  - 4. "That's fine"
  - 5. "Keep up the good work"
- B. Physical Contact Reinforcers
  - 1. Hugging
  - 2. Kissing
  - 3. Tickling
  - 4. Patty-cake
  - 5. Wrestling
  - 6. Bouncing on knee
  - 7. Ring-around-the-rosie

IV. Social-Manipulatable Reinforcers: Privileges and Playing with You
- A. Indoor Activities Reinforcers
  - 1. Playing ball
  - 2. Reading a book
  - 3. Letting the child help you, such as sweeping the floor, folding clothes, and so forth.
- B. Outdoor Activities
  - 1. Swinging
  - 2. Teeter-tottering
  - 3. Merry-go-round
  - 4. Going for a walk or going to the canteen
  - 5. Outdoor games - such as tag, blind-man's-buff, etc.
- C. Trips
  - 1. Home visit
  - 2. Fair
  - 3. Museum trip
  - 4. Short rides in car

V. Token Reinforcers: Money
- A. Money
  - 1. Actual money that can be used to buy things in the canteen or in the stores.
  - 2. Tokens, or "play" money, which can be used to buy the things listed above, in a store that is set up for the children.

VI. Self Reinforcers: Letting the Child Reinforce Himself

A. Letting the child engage in any activity that he wants to, after he first does something that he is supposed to do. This may be such things as running around the room or the play area, sitting and rocking, jumping up and down, and so forth.

Remembering that the reinforcer used will always be determined by the child, it is still possible to point to some advantages and disadvantages of each of the types listed above.

Edible reinforcers, although easy to use, tend to lose their power fairly rapidly with children. As you might expect, even M&M's can get pretty tiring if you eat them every day! Besides this, if edible reinforcers are used too much they may ruin the child's appetite, and he may not get the kinds of foods that he needs as a result. In general, edible reinforcers are sometimes necessary to get a child started, but it is always good to get away from them as soon as possible. As we have pointed out before, the easiest way to do this is to make sure that you give the child a social reinforcer, such as a hug or a "good boy," each time that you give him something to eat.

Manipulatable rewards are better to use than edible rewards, but you will often have to teach the child how to use the toys and games before they can be used as reinforcers. For example, many of the children wouldn't know what to do with a puzzle, so you would have to teach them to use a puzzle before it could be used as a reinforcer by itself. Indeed, much of what you will be doing is simply building up new things to use as reinforcers! You must remember, however, that some of the toys and games can also be dangerous if the child does not know how to use them correctly. Until he can use them right you had better watch so that he doesn't go around hitting other children with his truck and so forth.

Social reinforcers are, generally speaking, the best to use. In fact, some people feel that they are the most powerful for the normal child, even though they aren't for most retarded children. Therefore you must learn to build yourself up as a reinforcer so that you can use your praise and encouragement as a reward. Naturally enough, this is going to require, first of all, that the child really likes you.

Social-manipulatable reinforcers are much like social reinforcers, except that here you actively play with the child in some activity. Again, with many of the children you will have to teach him the activity, as well as build yourself as a reinforcer, before they can be used.

Token rewards are just like the reinforcers that we work for -- that is, our paychecks. We use tokens with the retarded children in place of money because that way we don't mind if they lose them, and the tokens we use are less dangerous because they can't be swallowed. If edible rewards and manipulatable rewards are used, it is by far best to have the child purchase them with tokens. This cuts down on the mess that food makes, it lets us give him edibles only at times when they won't ruin his appetite, and lets him choose his own rewards better than we ever could. If you start using tokens you will probably need the help of an expert in setting up a store, and in building tokens up to be reinforcers for the children.

Self reinforcers are given simply by letting the child do whatever he wants to after first requiring that he do something that you want him to do. This is especially useful when you have an especially difficult child to work with. For example, if you have a child that likes to run around the room a lot and just "raise cain" in general, you might begin by letting him run around only after he has spent five minutes sitting at a table working with a puzzle or coloring or something like that. We would hope that the activity at the table would become a reinforcer itself, so that gradually he would spend more time there than he would running around. Of course, giving him other rewards, such as edibles, manipulatables, social reinforcers, or tokens, for sitting and working would also help speed up this process.

## APPENDIX C

## SAMPLE FORMS FOR PRETESTS AND POSTTESTS

This section contains a set of forms that you may find helpful in keeping track of the children's progress. There is nothing sacred about the way that we have made them up -- you should modify them as you see fit to make them suit your needs.

We suggest, however, that each child be assigned a large loose-leaf binder in which his records can be kept. This should be separated into sections that would contain, in order, his sheets for each activity. In this way you will be able to keep up to date on each child and more easily be able to change his program to meet his individual needs.

Some of the tests should be given at regular intervals, especially those that measure progress in self-help skills, such as eating, dressing, and grooming. The other tests are best given at intervals which you feel are adequate for assessment of progress.

In general, the child should be left to do as well as he can, without your help, when you give the tests. That is, the test won't give a true picture of his behavior, if you push him through the activities. You should always indicate to the child what you want him to do, but you should help him no more than necessary during the test.

You probably will not use each of these forms for each child. It is up to you to decide which activities are appropriate for each child, and to select a record form for each of these activities. You may have to devise your own record sheet if you want to work on an activity that is not included in the manual.

ACTIVITY #1 - Sitting Quietly in a Chair

Child's Name ______________________________ Day __________ Time __________

Observer ______________________________

| Minute | Seconds | | | |
|---|---|---|---|---|
| | 0-15 | 15-30 | 30-45 | 45-60 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Total __________

INSTRUCTIONS:

1. Mark a "1" in the correct box for each 15 second period that the child spends sitting quietly and working. If he leaves the table or becomes disruptive during any 15 second interval, leave that box blank.

2. Alternate method: Use a stop watch and turn it on during the periods that the child is sitting at the table working, and off during any period that he is not. Record in this manner for 10 minutes, and give him a score equal to the total number of seconds (of the total 600) that he spent sitting quietly.

ACTIVITY # 2 - Building Puzzles

Child's Name ______________________ Observer ______________________

| Puzzle | Date Started | Date Finished | Time Spent Teaching Child Puzzle | | | | | | Total Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | |
| #1 | | | | | | | | | |
| #2 | | | | | | | | | |
| #3 | | | | | | | | | |
| #4 | | | | | | | | | |
| #5 | | | | | | | | | |
| #6 | | | | | | | | | |
| #7 | | | | | | | | | |
| #8 | | | | | | | | | |
| #9 | | | | | | | | | |
| #10 | | | | | | | | | |

INSTRUCTIONS: You should have a standard set of puzzles which range from very easy (#1) to very hard (#10).

Record in the appropriate box the date that each puzzle was given to the child for the first time and the date that the child was able to do the puzzle without help. Record also the amount of time that you spent working with the child on the puzzle, and add this up to get the total time for each puzzle. Finally, you can use the space below for any comments concerning the child's behavior.

COMMENTS:

ACTIVITY # 3 - Coloring

Child's Name ______________________ Observer ______________________

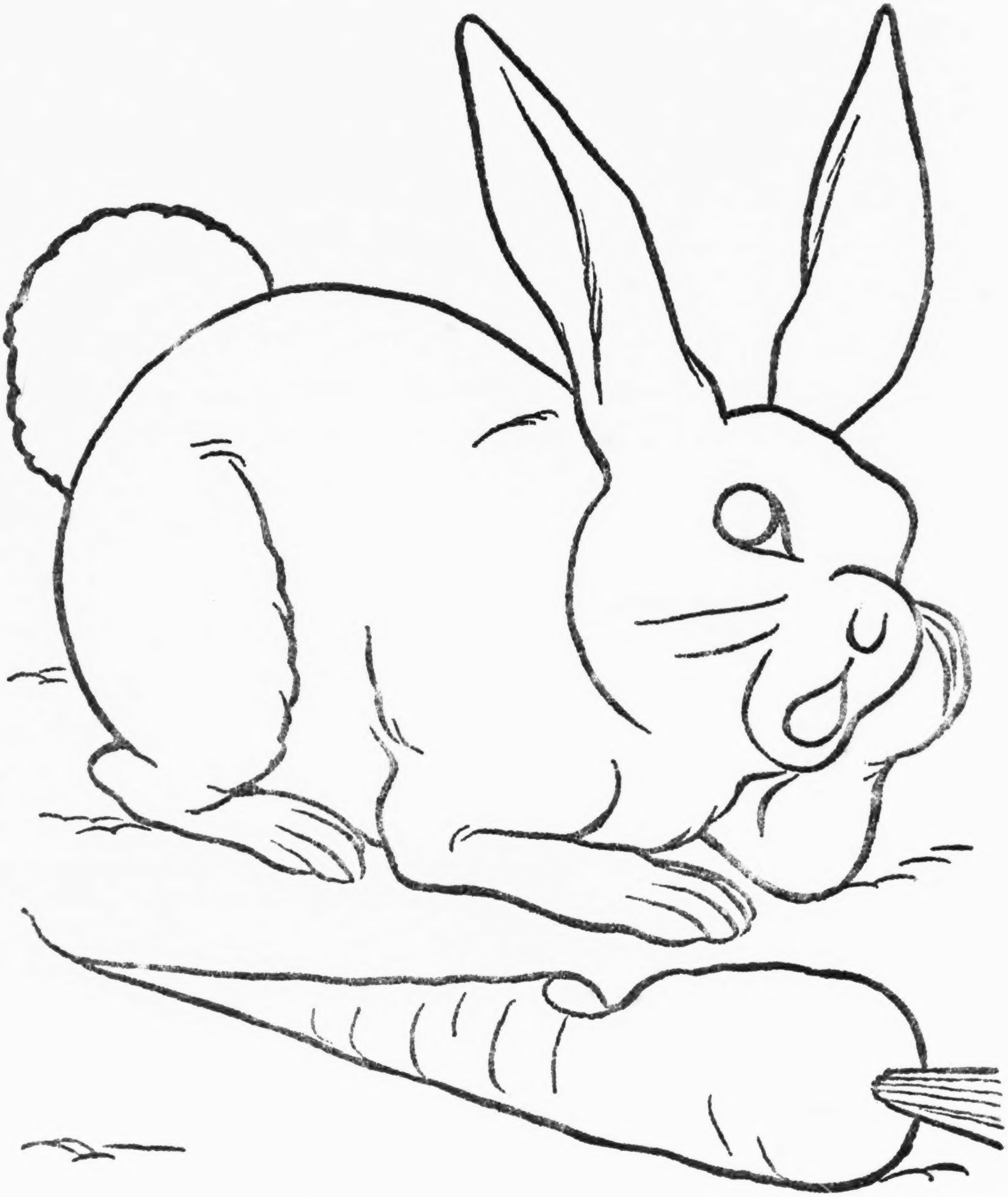
| Picture | Poor | Fair | Good | Very Good | Exclt. | Remarks | Date |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |

INSTRUCTIONS: Use a standard set of pictures (three examples are on the next pages), all of which are of about equal difficulty. Give the child one of these to color after each training session. Score each picture as noted above, from poor to excellent, and note in the remarks anything of importance, such as a tendency to use only one color, or a tendency to color the whole picture instead of the objects in it, and so forth. Save the pictures for future reference, putting the child's name and the date on each. List any appropriate comments below.

COMMENTS:

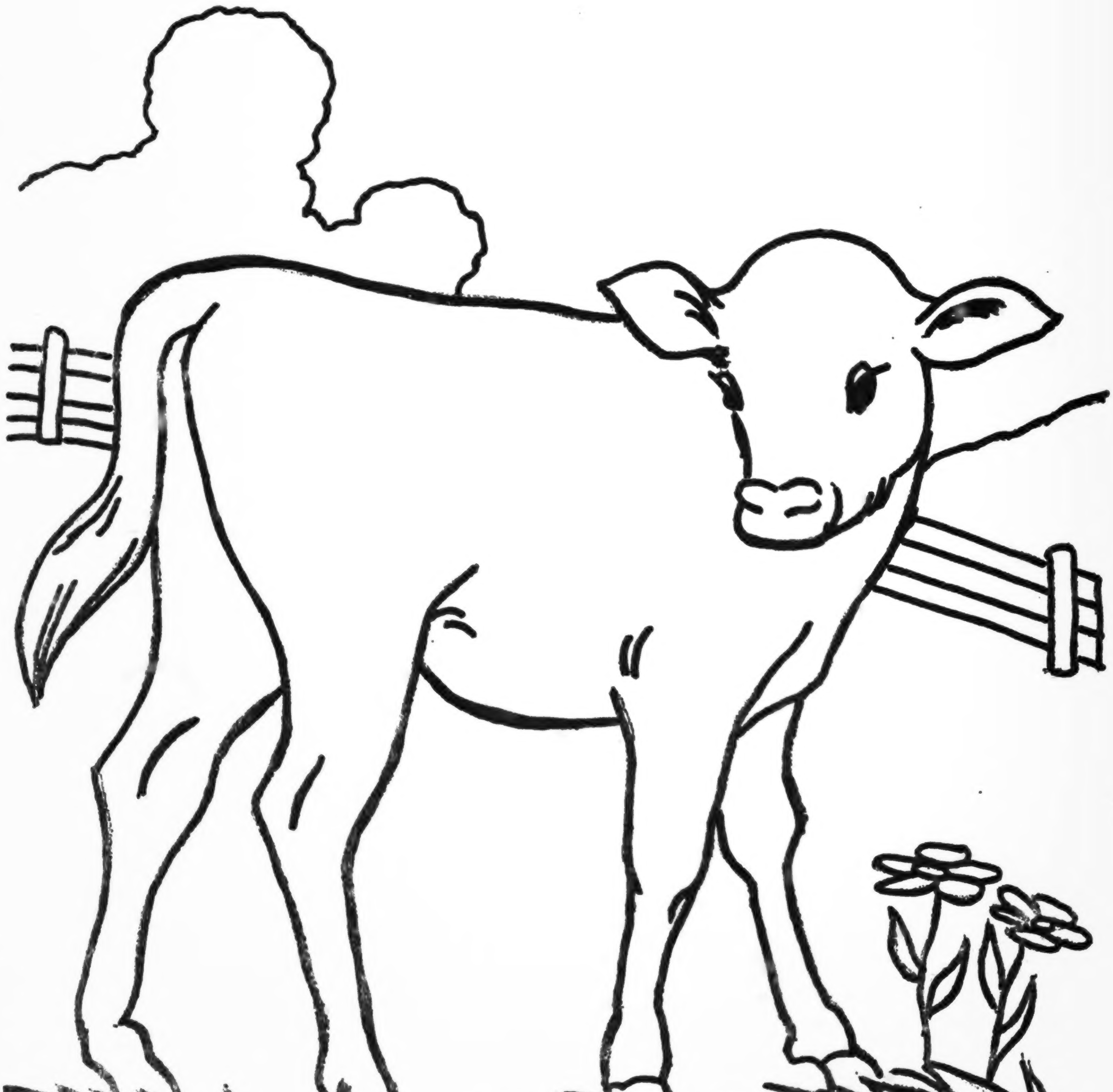
Child's Name ______________________ Date ______________

Observer ______________________



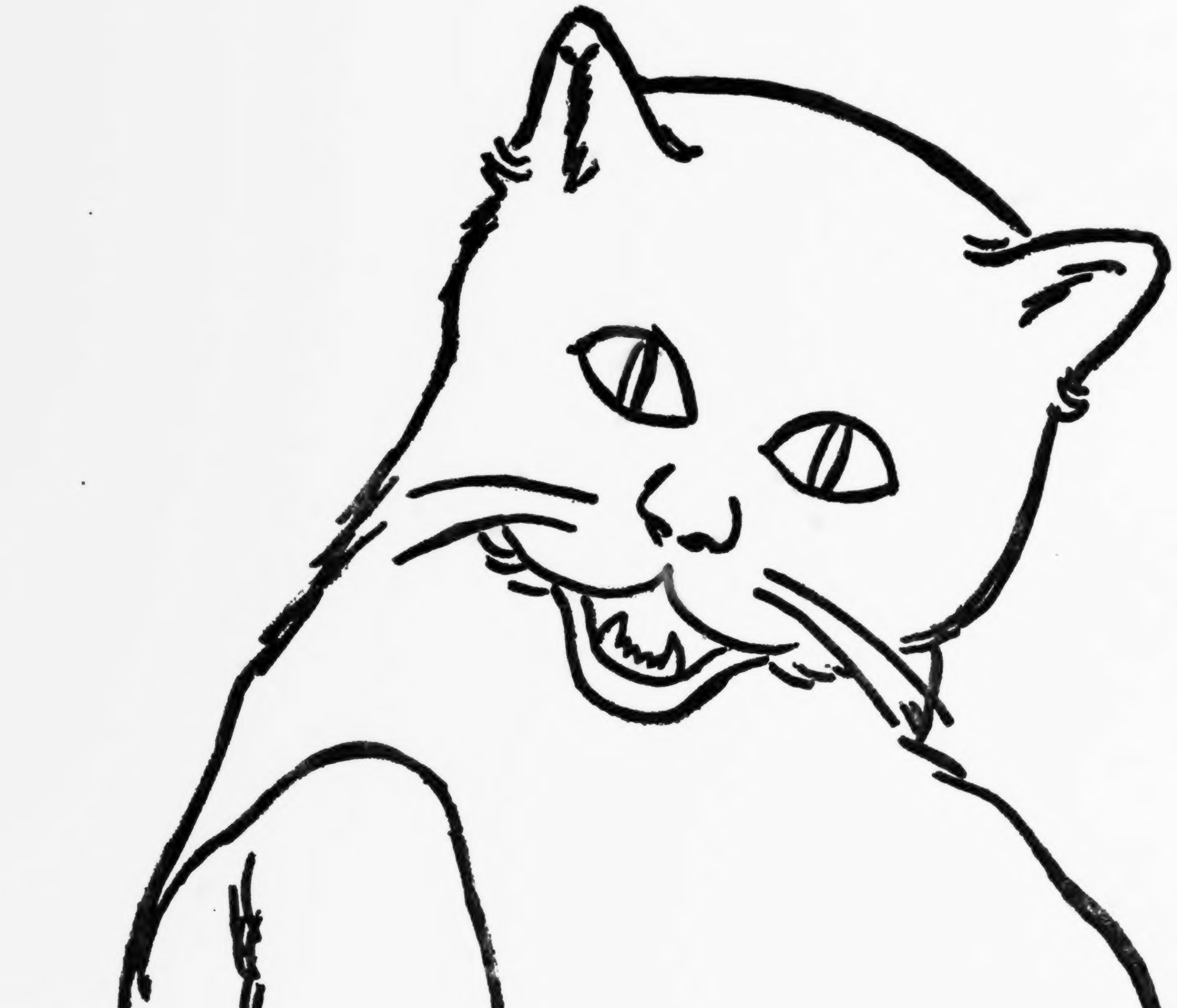
Child's Name ______________________________ Date _________________

Observer ___________________________________



Child's Name ______________________ Date ____________

Observer ______________________



ACTIVITY # 4 - Playing with Toys

Child's Name ______________________________ Day __________ Time __________

Observer ______________________________

| Minutes | Seconds | | | |
|---|---|---|---|---|
| | 0-15 | 15-30 | 30-45 | 45-60 |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |

INSTRUCTIONS: 1. Mark a "1" in the correct box for each 15 second period that the child is playing with the toys in an appropriate manner. If he leaves the toys or if he starts playing in a disruptive manner, during any of the intervals, leave that box blank. List relevant comments below.

2. Alternate method: Use a stop watch and turn it on during the periods that the child is playing well, and off during the periods that he is not playing or not playing correctly. Record in this manner for 10 minutes and give him a score equal to the total number of seconds (of the total 600) that he spent playing nicely.

COMMENTS.

ACTIVITY # 5 - Playing with a Ball

Child's Name ______________________ Date ______________ Time ____________

Observer __________________________

| Command | Correct | Incorrect | Total |
|---|---|---|---|
| "Throw the Ball" | | | |
| "Bounce the Ball" | | | |
| "Roll the Ball" | | | |
| "Kick the Ball" | | | |
| "Catch the Ball" | | | |
| | | | |
| | | | |
| | | | |
| | | | |

INSTRUCTIONS: 1. Repeat each activity at least 10 times, and record how well the child performs it.

2. Record under "Comment" anything of interest, such as any physical handicaps that prevent him from playing ball correctly.

COMMENTS:

ACTIVITY # 6 - Playing with a Wagon

Child "A's" Name ______________ Child "B's" Name ______________

| | Child "A" | | | Child "B" | | |
|---|---|---|---|---|---|---|
| | Always | Sometimes | Never | Always | Sometimes | Never |
| Does he like to pull the wagon? | | | | | | |
| Does he like to ride in the wagon? | | | | | | |
| Does he fight the other child to get into the wagon? | | | | | | |
| Does he fight the other child to pull the wagon? | | | | | | |
| Does he try to pull the wagon when the other child is in it? | | | | | | |

INSTRUCTIONS: Record, for each child, the information called for above. Under "comments" list anything of importance to the task, such as any physical handicaps that hinder the child from pulling the wagon.

COMMENTS:

ACTIVITY # 7 - Toileting

Child's Name ______________________ Week of ______________________

CODE: HIT = went in toilet U = urine BM = bowel movement
MISS = went elsewhere

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| 7 - 8 am | | | | | | |
| 8 - 9 am | | | | | | |
| 9 - 10 am | | | | | | |
| 10 - 11 am | | | | | | |
| 11 - 12 pm | | | | | | |
| 12 - 1 pm | | | | | | |
| 1 - 2 pm | | | | | | |
| 2 - 3 pm | | | | | | |
| 3 - 4 pm | | | | | | |
| 4 - 5 pm | | | | | | |
| 5 - 6 pm | | | | | | |
| 6 - 7 pm | | | | | | |

ACTIVITY # 8 - Eating Correctly

Child's Name ______________________ Date _________ Time ___________

Observer ______________________

| | Always | Sometimes | Never | With Help |
|---|---|---|---|---|
| 1. Does he enter quietly, without help? | | | | |
| 2. Does he sit down without help? | | | | |
| 3. Does he wait for everyone to sit down before starting? | | | | |
| 4. Does he direct his spoon accurately towards the food? | | | | |
| 5. Does he dip the spoon well? | | | | |
| 6. Does he need a bib? | | | | |
| 7. Does he use a napkin to wipe his face? | | | | |
| 8. Does he pick up his cup and put it back down without spilling? | | | | |
| 9. Does he drink without spilling? | | | | |
| 10. Does he steal food from others? | | | | |
| 11. Does he carry his tray to the table? | | | | |
| 12. Does he take his tray to the kitchen when done? | | | | |
| 13. Does he leave quietly when done? | | | | |

INSTRUCTIONS: 1. Fill out the above form for the child, observing him at mealtime.

2. Under "comments" note any particular physical handicaps that might interfere with eating, and any areas that need special attention.

COMMENTS:

ACTIVITY # 9 - Putting on a Pullover Shirt

Child's Name ______________________ Date ____________ Time __________

Observer ______________________

| | Always | Sometimes | Never | With Help |
|---|---|---|---|---|
| 1. Can he tell the front from the back? | | | | |
| 2. Does he put one arm through sleeve? | | | | |
| 3. Does he put both arms through sleeves? | | | | |
| 4. Does he put shirt on over his head? | | | | |
| 5. Does he pull the shirt down? | | | | |
| 6. Can he take the shirt off by himself? | | | | |
| 7. Does he try to put the shirt on by himself? | | | | |

INSTRUCTIONS: Give the child a pullover shirt, and indicate that you want him to put it on. Help him only as much as is necessary, letting him do as much as he can by himself.

COMMENTS:

ACTIVITY #10 - Putting on Pants

Child's Name ____________________ Date ______________ Time ______________

Observer ____________________

| | Always | Sometimes | Never | With Help |
|---|---|---|---|---|
| 1. Can he tell the front of his pants from the back? | | | | |
| 2. Does he put one foot through the correct leg? | | | | |
| 3. Does he put both feet through the correct legs? | | | | |
| 4. Does he pull the pants up as far as his knees? | | | | |
| 5. Does he pull the pants up as far as his waist? | | | | |
| 6. Can he put a belt through the belt loops? | | | | |
| 7. Can he buckle his belt? | | | | |
| 8. Can he unbuckle his belt? | | | | |
| 9. Can he take his pants off by himself? | | | | |
| 10. Does he zip his pants up? | | | | |
| 11. Does he button the top button? | | | | |
| 12. Does he try to put his pants on without help? | | | | |

INSTRUCTIONS: Give the child a pair of pants and a belt, and indicate that you want him to put them on. Help him only as much as is necessary, letting him do as much as he can by himself.

COMMENTS:

ACTIVITY # 11 - Putting on Socks

Child's Name ______________________ Date ___________ Time __________

Observer ______________________

| | Always | Sometimes | Never | With Help |
|---|---|---|---|---|
| 1. Does he hold the sock correctly for putting it on? | | | | |
| 2. Does he put the sock on over his toe? | | | | |
| 3. Does he pull the sock on over his heel? | | | | |
| 4. Does he pull the sock all the way up? | | | | |
| 5. Can he take the sock off? | | | | |
| 6. Does he try to put the sock on by himself? | | | | |

INSTRUCTIONS: Give the child a sock, and indicate that you want him to put it on. Help him only as much as necessary, letting him do as much as he can by himself.

COMMENTS:

ACTIVITY # 12 - Buttoning Buttons

Child's Name ______________________ Date ________ Time ____________

Observer ______________________

| | Always | Sometimes | Never | With Help |
|---|---|---|---|---|
| 1. Does he match the button with the right buttonhole? | | | | |
| 2. Does he get the button started through the buttonhole? | | | | |
| 3. Does he get the button all the way through the buttonhole? | | | | |
| 4. Does he button all of the buttons? | | | | |
| 5. Does he unbutton the buttons? | | | | |
| 6. Does he try to button his shirt by himself? | | | | |

INSTRUCTIONS: Give the child a shirt, and indicate that you want him to put it on. Help him only as much as necessary, letting him do as much as he can by himself.

COMMENTS:

ACTIVITY # 13 - Tying Shoelaces

Child's Name ____________________ Date __________ Time __________

Observer ____________________

| | Always | Sometimes | Never | With Help |
|---|---|---|---|---|
| 1. Does he pull his laces tight? | | | | |
| 2. Does he tie a single knot? | | | | |
| 3. Does he get the first loop of the bow made? | | | | |
| 4. Does he tie the bow completely? | | | | |
| 5. Does he untie the bow? | | | | |
| 6. Does he try to tie the bow by himself? | | | | |

INSTRUCTIONS: Give the child a shoe with the laces unloosened, and indicate that you want him to pull them tight and tie a bow. Help him only as much as necessary, letting him do as much as he can by himself.

COMMENTS:

ACTIVITY # 14 - Brushing Teeth

Child's Name ______________________ Date __________ Time __________

Observer ______________________

| | Always | Sometimes | Never | With Help |
|---|---|---|---|---|
| 1. Does he pick out his own toothbrush? | | | | |
| 2. Does he put toothpaste on it? | | | | |
| 3. Does he brush his teeth? | | | | |
| 4. Does he put the toothpaste back? | | | | |
| 5. Does he put his toothbrush back? | | | | |
| 6. Does he rinse his mouth? | | | | |
| 7. Does he try to brush his teeth by himself? | | | | |

INSTRUCTIONS: Indicate that you want the child to select his toothbrush and brush his teeth. Help him only as much as necessary, letting him do as much as he can by himself.

COMMENTS:

ACTIVITY # 15 - Washing

Child's Name ______________________ Date _______ Time __________

Observer ______________________

| | Always | Sometimes | Never | With Help |
|---|---|---|---|---|
| 1. Does he turn the water on? | | | | |
| 2. Does he wash his hands? | | | | |
| 3. Does he use soap? | | | | |
| 4. Does he put the soap back? | | | | |
| 5. Does he rinse his hands? | | | | |
| 6. Does he turn the water off? | | | | |
| 7. Does he dry his hands? | | | | |
| 8. Does he put the towel back? | | | | |
| 9. Does he try to wash his hands by himself? | | | | |

INSTRUCTIONS: Put the child in front of a sink, with soap and a towel close by. Indicate that you want him to wash his hands. Help him only as much as necessary, letting him do as much as he can by himself.

COMMENTS:

ACTIVITY # 16 - Imitation of Movements

Child's Name ______________________ Date ____________ Time ________

Observer _________________________

| Movement to be Imitated | Correct | Incorrect | Total |
|---|---|---|---|
| Hands out (to teacher) | | | |
| Hands up | | | |
| Hands out (to sides) | | | |
| Hands on head | | | |
| Touch toes | | | |
| Touch knee | | | |
| Touch stomach | | | |
| Touch chin | | | |
| Touch hair | | | |
| Touch ear | | | |
| Touch mouth | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

INSTRUCTIONS: Give the child at least 10 tries with each movement, and record whether or not he did it correctly. Be sure to not give him credit unless he does a pretty good job.

COMMENTS:

ACTIVITY # 17 - Imitation of Mouth Movements

Child's name ______________________ Date ________ Time ____________

Observer ______________________

| Movement Number | Correct Movement | Partially Correct | Incorrect Movement | No Response |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |

INSTRUCTIONS: Give the child at least 5 tries on each movement, and record his responses. Use "comment" to note any special problems or difficulties. Refer to page 63 in the manual for an explanation of each of the movements.

COMMENTS:

ACTIVITY # 18 - Imitation of Sounds

Child's Name ______________________________

Part 1: Frequency of Sound Production

|  |  |  | Minutes |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Time | Situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Observer |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |

INSTRUCTIONS: Record the situation in which the child is when you are observing him, and the number of times that he vocalizes. Count as a vocalization any sound, word, string of words, or sentences. For instance -- if a child runs together a string of words or sentences and if the words are not separated by more than 5 second delays, it should be counted as a single vocalization.

COMMENTS:

## ACTIVITY # 18 - Imitation of Sounds
## Part 2 - Imitating Sounds

Child's Name ______________________ Date ________ Time ____________

Observer ______________________

### LIST OF SOUNDS

| Sound | Correct | Partially Correct | Incorrect | No Response |
|---|---|---|---|---|
| 1. Say F (as in Fat) | | | | |
| 2. Say B (as in Baby) | | | | |
| 3. Say T (as in Toy) | | | | |
| 4. Say D (as in Do) | | | | |
| 5. Say K (as in Kitty) | | | | |
| 6. Say G (as in Gone) | | | | |
| 7. Say P (as in Pop) | | | | |
| 8. Say V (as in Very) | | | | |
| 9. Say TH (as in That) | | | | |
| 10. Say TH (as in Thin) | | | | |
| 11. Say S (as in Some) | | | | |
| 12. Say Z (as in Zoo) | | | | |
| 13. Say SH (as in Shirt) | | | | |
| 14. Say ʒ (as in Measure) | | | | |
| 15. Say CH (as in Church) | | | | |
| 16. Say J (as in Judge) | | | | |
| 17. Say H (as in Hat) | | | | |
| 18. Say M (as in Man) | | | | |
| 19. Say N (as in Noon) | | | | |

List of Sounds (Cont'd.)

Child's Name ____________ Observer ____________ Date ________ Time __________

| Sound | Correct | Partially Correct | Incorrect | No Response |
|---|---|---|---|---|
| 20. Say W (as in Wagon) | | | | |
| 21. Say L (as in Light) | | | | |
| 22. Say R (as in Run) | | | | |
| 23. Say Y (as in Yellow) | | | | |
| 24. Say WH (as in While) | | | | |
| 25. Say ING (as in Hang) | | | | |
| 26. Say ee (as in Feet) | | | | |
| 27. Say e (as in Bed) | | | | |
| 28. Say i (as in Fish) | | | | |
| 29. Say ɝ (as in Bird) | | | | |
| 30. Say æ (as in Hat) | | | | |
| 31. Say ah (as in Father) | | | | |
| 32. Say uh (as in Cup) | | | | |
| 33. Say aw (as in Ball) | | | | |
| 34. Say o (as in Coke) | | | | |
| 35. Say oo (as in School) | | | | |
| 36. Say a (as in Bait) | | | | |
| 37. Say ai (as in Pie) | | | | |
| 38. Say oee (as in Boy) | | | | |

INSTRUCTIONS: Give the child at least 5 tries on each sound, and record his response.

COMMENTS:

ACTIVITY # 19 - Imitation of Words

Child's Name ____________ Observer ____________ Date ________ Time __________

| Word | Correct Imitation | Partially Correct | Incorrect Imitation | No Response |
|---|---|---|---|---|
| Bye-Bye | | | | |
| Hi | | | | |
| Yes | | | | |
| No | | | | |
| The | | | | |
| In | | | | |
| Are | | | | |
| Our | | | | |
| Mine | | | | |
| Me | | | | |
| You | | | | |
| I | | | | |
| He | | | | |
| She | | | | |
| Want | | | | |
| Good | | | | |
| Fine | | | | |
| His or Her Name | | | | |
| Am | | | | |
| Your Name Last or First | | | | |

INSTRUCTIONS: Have the child try to imitate each word at least five times, and record his responses.

COMMENTS:

ACTIVITY # 20 - Understanding Words - Pretest and Posttest

Child's Name ____________ Date ________ Time ________ Observer ______________

Is the child naming or pointing? ______________

| Word | Right | Wrong | Word | Right | Wrong | Word | Right | Wrong |
|---|---|---|---|---|---|---|---|---|
| car | | | bread | | | shirt | | |
| truck | | | milk | | | socks | | |
| bus | | | meat | | | shoes | | |
| bicycle | | | orange | | | pants | | |
| motorcycle | | | apple | | | dress | | |
| scooter | | | banana | | | coat | | |
| wagon | | | beans | | | hat | | |
| ambulance | | | potatoes | | | underwear | | |
| man | | | dog | | | plate | | |
| woman | | | cat | | | bowl | | |
| boy | | | cow | | | cup | | |
| girl | | | sheep | | | spoon | | |
| baby | | | elephant | | | fork | | |
| policeman | | | horse | | | knife | | |
| nurse | | | lion | | | pan | | |
| doctor | | | pig | | | tray | | |
| | | | | | | | | |
| | | | | | | | | |

INSTRUCTIONS: Fill out separate sheets for the naming and pointing activities, as described in Activity #20. Give as many tries as necessary to be certain that he does or does not know the word.

COMMENT:

ACTIVITY # 21 - Understanding the Names of Colors - Pretest and Posttest

Name ____________ Date ________ Time ________ Observer ______________________

| Naming | | | Pointing | | |
|---|---|---|---|---|---|
| Color | Right | Wrong | Color | Right | Wrong |
| White | | | White | | |
| Black | | | Black | | |
| Brown | | | Brown | | |
| Red | | | Red | | |
| Orange | | | Orange | | |
| Yellow | | | Yellow | | |
| Green | | | Green | | |
| Blue | | | Blue | | |
| Gray | | | Gray | | |
| Purple | | | Purple | | |

INSTRUCTIONS: Record the child's responses when you ask him to name the colors, and then when you ask him to point to them. Colored blocks are recommended for these tests.

COMMENTS:

## ACTIVITY # 21 - Understanding the Names of Colors - Training

Child's Name ______________ Date __________ Time ______________

Observer __________________ Object Pair Used _______ and _______

| Object Asked For | Right | Wrong | Object Asked For | Right | Wrong |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
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INSTRUCTIONS: Record the objects and their colors that you used in this training session, which one asked for on each trial, and the child's responses.

COMMENTS:

ACTIVITY # 22 - Naming Objects, Actions, and Colors

Child's Name __________ Date ______ Time ______ Observer ___________

Objects, Actions, or Colors Used: 1 __________, 2 __________, 3 __________

4 __________, 5 __________, 6 __________ 7 __________, 8 __________

| Asked For | Right | Wrong | Asked For | Right | Wrong |
|---|---|---|---|---|---|
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INSTRUCTIONS: Record the objects, actions, or colors that you are using, the one that you asked for on each trial, and the child's response.

COMMENTS:

ACTIVITY # 23 - Talking in Sentences

Child's Name ______________________ **Observer** ______________________

**SENTENCES**

1. ______________________ 6. ______________________

2. ______________________ 7. ______________________

3. ______________________ 8. ______________________

4. ______________________ 9. ______________________

5. ______________________ 10. ______________________

| Sentence | Date Started | Date Finished | Time spent teaching the sentence | | | | | Total Time Spent |
|---|---|---|---|---|---|---|---|---|
| | | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |

INSTRUCTIONS: Record the sentence you are working on and the time that you spend trying to teach it to the child. (A "standard" set of sentences should be used.)

COMMENTS:

## APPENDIX D

## GLOSSARY

1. BASELINE. See PRETEST.

2. BEHAVIOR. What a person does. Behavior refers to everything that a person does, from small responses such as blinking his eyes to large responses such as reading a book. In behavior modification we deal only with behavior that is observable.

3. CONTINGENCY. A relationship between a behavior and a reinforcer. Whenever a given behavior leads to a given reinforcer, we say that the reinforcer is contingent upon the behavior.

4. EDUCATION. Changing behavior for the better. Education is usually accomplished by setting up an environment in which better behavior can occur easily, and in which better behavior is reinforced (strengthened).

5. ENVIRONMENT. The surroundings and situations that a person lives in, and which have an effect on his behavior. Materials, such as books and toys, people, and even reinforcers, are all a part of a person's environment.

6. EXTINCTION. Letting undesirable responses go away by refusing to reinforce them with positive reinforcers. That is, getting rid of undesirable responses by withholding the reinforcers that the person has received for them in the past.

7. HINT. Prompting or helping a person emit a behavior which he cannot do by himself. Hints are given only as much as necessary, and usually only during the first few times that a response is made.

8. IMITATION. Copying what another person does. In education, imitation is the process of having the child do the same things that the teacher (model) does.

9. LEARNING RULE. When a given behavior occurs in a given situation and is followed by a positive reinforcer, that behavior is more likely to be repeated in the future, when the person is in the same situation again. Likewise, if the behavior is followed by a punisher, it is less likely to be repeated in the same situation in the future.

10. NEGATIVE REINFORCEMENT. The process of removing a negative reinforcer, or punisher, for the occurrence of a desired behavior. The result is that the desired behavior will be more likely to be repeated in the future.

11. NEGATIVE REINFORCER. Something that happens to a person that he does not like. Negative reinforcers, like positive reinforcers, must be determined for each individual person, and different people dislike different things.

12. OBJECTIVITY. One of the characteristics of a good pretest or posttest. By objectivity it is meant that the test deals with behaviors that are observable and measurable.

13. POSITIVE REINFORCEMENT. The process of applying a positive reinforcer, or reward, for the occurrence of a desirable behavior. The result is an increased chance that the desired behavior will more likely be repeated in the future.

14. POSITIVE REINFORCER. Something that happens to a person that he likes. Reinforcers can be of several types, and they are determined on an individual basis for each person.

15. POSTTEST. Measuring what a person can do after an education program has been tried. The difference between what he does on the pretest and what he does on the posttest is a measure of how effective the educational program has been.

16. PUNISHER. See NEGATIVE REINFORCER.

17. PUNISHMENT. The process of applying a negative reinforcer, or punisher, when an undesirable behavior occurs. The result is that the undesirable response will be less likely to be repeated in the future.

18. RELIABILITY. One of the characteristics of a good pretest or posttest. Reliability is measured as the extent to which two persons measuring the same behavior at the same time get exactly the same scores.

19. REWARD. See POSITIVE REINFORCER.

20. SELF-REINFORCERS. Reinforcers that are activities that the person likes to engage in. To use self-reinforcers, the person is allowed to do the things that he likes only after he first does the things that the teacher wants him to do.

21. SHAPING. Building a desirable behavior in small steps, or getting rid of an undesirable behavior in small steps. In shaping, a reinforcer is given for each behavior that is a little bit better than the last behavior that was reinforced.

22. SIGNAL. Stimuli or events in the environment that tell the person what to do -- that is, stimuli that control behavior. Signals are built up as behavior controls by giving or withholding reinforcers at the same time that the signal is given.

23. STABILITY. One of the characteristics of a good pretest or posttest. Stability refers to observing behavior long enough so that time-to-time fluctuations can be taken into account.

24. STIMULUS. A stimulus is any event, person, or thing in the environment to which the person pays attention.

25. STIMULUS CONTROL. When a given stimulus always leads to a given behavior, that stimulus is said to control that behavior. Much of education is concerned with building new stimuli as controllers of behavior.

26. TIME OUT FROM POSITIVE REINFORCEMENT. Time out is the process of removing a positive reinforcer when an undesirable behavior occurs. The result is that the undesired response will be less likely to be repeated in the future.

27. TOKEN. A reinforcer, like money, that can be used for many different kinds of behavior. The token allows the person to select his own reinforcer, which he pays for with the tokens.

28. WITHHOLDING REINFORCERS. See EXTINCTION.

# APPENDIX E

# APPLICATIONS TO BLIND AND DEAF CHILDREN

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Children who are blind or deaf, or who have impaired sight or hearing, pose special problems for the parent or teacher, and require special procedures for their education. This section is devoted to giving you some of the techniques that can be used with deaf and blind children. Please remember that what we have said earlier in this manual, concerning the uses of reinforcers, is applicable to deaf and blind children too. Here we will emphasize some of the things that should be taught to these children, and the order in which they should be taught.

I. Blind Children. One of the most important things for any blind or partially sighted child to learn is how to get around in his environment. We must distinguish, here, between children who are totally blind and those who have some vision. Children with impaired vision often have the ability to see the outlines of people and objects, and to tell the differences between light and dark. You must be certain to take advantage of any vision that the child has, as this will be a tremendous help in teaching him to move around -- that is, in teaching him mobility.

To teach mobility to blind children, the following steps are usually taken one at a time:

(1) Lead the child around a room, holding on to one of his hands. You should guide his other hand as necessary, to allow him to feel the wall where he's going, and to explore the furniture and other objects that he comes into contact with. Be sure to move him around the room very slowly at first, so that he gets the "feel" of the room and the different things that are in it.

(2) Let the child lead you around the same room, which should be familiar to him by now, holding on to your hand only for security.

(3) Have the child leave you for short periods, and move around the room by himself. When you get to this point you should always stay in the same place at first, so that he can easily find you again. You should also talk to him, to let him know that you are close by, and to encourage him to move more by himself. You should also begin by having him move away for only short distances, gradually increasing these until he moves further and further by himself. At first you may want to have him move along a wall, with you staying by the wall too, so that he can easily come back at any time. Remember, though, to withdraw these supports as fast as you can, and to always require that he increase his mobility without your help.

(4) Let the child move around the familiar room by himself. He will probably want to stay by the wall, or by familiar pieces of furniture, at first, but he should soon learn to move all around on his own.

In going through these steps you should keep all of the furniture and objects in the room in the same place. The child will probably learn to follow the same route when going from one place to another at first. You should be sure to reinforce him for finding new routes, however, and for exploring on his own and for moving faster and better. You may even want to teach him how to run, although this may be best to do outside.

You can also teach him to crawl over and under the furniture, to sit in a chair and on the floor, to slide from a chair to the floor, to bang on a table and on the floor, to crawl through doors and other openings, to move objects from one place to another, and to find objects that have been misplaced. All of these activities will be a help when you start teaching him to use other play equipment, such as swings, slides, tricycles, sleds, and roller skates.

After the child learns to move around in a familar room, the next step is to get him to explore and learn unfamiliar places without being upset. Take him to rooms and places that are unfamiliar, and encourage him to explore and move around by himself. The main things to remember are:

(1) Always give the child only as much help as he needs, and always try to do less and less for him as he does more and more for himself.

(2) Reinforce him whenever he improves in his mobility -- that is, whenever he moves around better, faster, or more on his own.

(3) Don't make a big fuss over the bumps and bruises he gets. Blind children will always be more likely to get bumps and bruises whenever they are in unfamiliar surroundings. Be

sympathetic when he hurts himself -- just as any mother or teacher would be for any child -- but don't over react simply because the child is blind.

There are several other techniques that can be used to help the child get started in his mobility, which you can use if necessary:

(1) Mobility requires that the child get to know his enviornment and have confidence in his ability to deal with it by himself. With very young children you can tie some toys to a string, and fasten the other end to his playpen or some other piece of furniture. This will allow him to get his toys by himself, and will teach him that he can do things for himself, as well as show him that his toys are still around, even though he can't see them.

(2) If the child is afraid to get up and walk around by himself, you may want to start by having him push a chair in front as he walks. Or, you could use one of the infant walkers that are mounted on wheels. Another method is to begin by having him stand on your feet, and you walking him around the room. Remember, however, to get him away from supports like this as soon as possible -- the goal is for him to move around by himself, without any help.

(3) If the child has light vision -- and you can usually tell this by watching how he reacts to sudden changes in the room from light to dark -- you can begin by placing him in a dark room with a bright light in the center of it. Then teach him to walk or move towards the light. If you have a light that

rotates it will be easier for him to see, and may make the training easier. The goal here is, of course, to teach him that he can move around safely by himself.

A second major area of education for blind children is to teach them the meaning of words. If the child has some vision remaining, it may be possible for you to use some of the activities included in this manual that are designed for this purpose. You will probably have to make special arrangements for children with poor vision, however. That is, you will probably have to use materials and objects that have bright colors, are very large, and which have heavy, distinct outlines.

Perhaps the main thing to remember is that blind children must get to know objects by touching, tasting, hearing, and smelling them, rather than by seeing them. To teach him the meaning of words, then, you must begin by letting the child get to know an object by letting him explore it with his touch, taste, smell, and hearing. Then you can tell him the name of the object, and repeat pairing the name with the object itself, until he learns the word.

You can also let him compare two objects, to teach him words that describe their similarities and differences. For example, you could give him a piece of sandpaper and a smooth stone, and tell him to choose the "rough" one and the "smooth" one. This should be repeated until he always correctly chooses the one that you ask for. You will find that the activities included in this manual, such as those on understanding words and naming objects, can be used with blind children, if you change your techniques to make use of the child's other senses, instead of his vision.

*II. Deaf Children*. Deaf children, like blind children, can be separated into two groups -- those who cannot hear anything at all, and those who can hear a little bit, with or without a hearing aid. You must always try to make use of whatever hearing the child has, by talking louder if necessary, and by speaking clearly and distinctly.

Perhaps the most important thing for deaf children to learn is language, and one of the first steps in learning language is to learn to understand people when they speak. Every effort must be made to use whatever hearing the child has. Getting a hearing aid for hearing impaired children very early is of major importance. Getting each child to *use* his hearing is even more important.

The first thing to remember is to put yourself on the level of the child's hearing aid, or ears if he has no hearing aid. Talk in simple sentences into the child's ear. For example, you could hold up a ball and say "This is a *ball*. It's a big *ball*. The *ball* rolls." You could then show the child how the ball rolls, and say "See the *ball*. The *ball* rolls like this." Then you could give the ball to the child, and say "Now you have the *ball*. Roll the *ball* to me." Notice that the word "ball" is used in each sentence, that it is stressed in each sentence, and that the sentences are quite short, to begin with.

You should begin by teaching the child the names of objects and people that he deals with often in his enviornment. Be sure to start with simple words, and stress them each time that you say them. Draw attention to sounds as they occur in the enviornment. "*Bang* went the door," or"*Bang*! Bobby's plate fell," help the child identify the sound with its cause. Give the child the word that tells what you are doing. "*Pour*, *pour*, *pour*" can be used when pouring milk and "Wash your hands, wash, wash, wash," can be used when it's hand-washing time.

Another way of using the child's hearing is to use a record player that can be connected to a pair of headphones. Begin by playing the record to the child at a very loud volume setting, and gradually turn the volume down. If you repeat this many, many times the child will begin trying to hear at lower and lower volumes. (You must, of course, use records that he likes and wants to hear.)

With children who are deaf and blind, you will probably have to give additional support. You can do this by letting the child place his hand over your face, with his thumb on your lips and his fingers spread over your face, with his little finger down below your jawbone. Then, when you say a word such as "ball," and give him a ball at the same time, he will get a better idea of how your lips and face move when you speak.

Using the hearing that is left is only a part of language. At the same time the child must learn how to speak words. The activities on sound and word production in this manual can be used for this purpose, if you change the techniques enough to compensate for his lack of hearing.

In teaching the child to name objects, for example, you must first make sure that his attention is directed at the objects you want him to learn. You then have to get him to make sounds, and gradually shape these sounds into correct words. As always, you must reinforce him for getting better in the words and sounds he is making.

It may help if you have the child hold one hand over your face as described above, and his other hand over his own face in the same way. This will allow him to compare his mouth and face movements with yours, and to imitate you more easily.